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Did the IMF Bailout Programs Stabilize the Markets of Southeast Asia during the Asian Financial Crisis?

By

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ABSTRACT

In this paper, I will explore the impact of three bailout programs offered by the International Monetary Fund during the Asian Financial Crisis. I evaluate the capabilities of these programs to stabilize the markets in Thailand, Indonesia, and South Korea by critically examining the Asia economic background, the International Monetary Fund, and the events of Asian Financial Crisis. I conclude that these programs did not have large impact on the volatility in these three countries. In addition, these programs are insignificant to the abnormal return of markets in these countries. Therefore, these programs associated with high cost cannot stabilize these countries' economy during the Asian Financial Crisis.

TO Mom and Dad

Their love and support let me believe in myself ...

ACKNOWLEDGEMENTS

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Chapter 1

Introduction

On July 2, 1997, the Thailand government announced a change from a fixed exchange rate policy into floating exchange rate policy after heavily defending against speculators attack in the previous several months. This date marked the beginning of the Asian Financial Crisis. The Crisis lasted over ten months. Five Asian countries, included Thailand, Indonesia, South Korea, Malaysia, and the Philippines were directly affected, and most of the Asian countries were influenced to a different degree. In the aftermath of the Crisis, there have been many research papers related to this topic conducted by different economists and financial analysts. In Radelet and Sachs (1998), it stated that the International Monetary Fund's bailout programs, associated with faulty policies, created panic for the three Asian countries. This argument was one of the main hypotheses and interpretations of the Crisis from the current existing papers. On the other side, the International Monetary Fund proposed these programs in order to stabilize the severe economic situations in different Asian countries. The main purposes of the programs were trying to restructure the confidence of the countries' economies, and rebuild the inappropriate monetary and fiscal policies.

There is a major conflict between the non-IMF economists and the International Monetary Fund point of view on the issue of the bailout programs provided for these three Asian countries. This leads to my question: "Did the IMF Bailout Programs Stabilize the Markets of Southeast Asia during the Asian Financial Crisis?" To obtain an answer to this question, I will conduct my research in the following manner.

This chapter consists of two sections. The first section will cover the background and functions of the International Monetary Fund. The second section studies the economic conditions of Asian region from 1987 - 96, ten years of economic conditions before the Asian Financial Crisis.

In Chapter 2, the first section will describe the major events related to the International Monetary Fund during 1997 to 1998. The second section will focus on the causes of the Asian Financial Crisis. The first half of Chapter 3 will concentrate on the details of the three bailouts programs provided by the International Monetary Fund. The second half will be a critical analysis for the initial version of these programs. Chapter 4 will perform an empirical analysis. It will use an event-study model to assess the impact of the bailout programs announced by the International Monetary Fund. The model will test for abnormal return on the stock market, foreign exchange rate, and interest rate around the announcements. In addition, I will test for changes in financial market volatility for the same variables in testing the impact of the bailout programs. Chapter 5 will conclude the study.

Section A

The International Monetary Fund

During 1990s, the International Monetary Fund (IMF) increased its publicity and visibility to the public through the Mexico and Asian Financial Crisis. Before these crises, the International Monetary Fund acted as a mysterious organization in the international scenes. Most people think that the World Bank controls the International Monetary Fund and it subsidizes economic development of poorer countries. People are also confused that International Monetary Fund controls the money creation of world scale. In this section, I will describe the International Monetary Fund precisely in its different areas, such as its: (1) history; (2) statutory purposes; (3) membership, quotas, and voting; (4) organization and operations; and (5) roles and functions. Through these different areas, the discussion helps to clarify the misconceptions of the International Monetary Fund.

(1) History

During the Great Depression in the 1930s, all forms of economic life in the world were in diminishing. Banks failed, interest rates and inflation rates rose sharply, extremely high unemployment rate arose, agricultural prices fell below the cost of production, and land values plummeted. A lack of confidence in paper money led to an increase in demand for precious metals, such as gold and silver, so that treasuries could not have enough reserve to supply. This forced several countries, led by the United Kingdom, to abandon the gold standard as the indicator for the known and stable value of its currency when comparing with others. Therefore, the value of their currency became

uncertain. When doing foreign currency exchange between countries with the gold standard and countries abandoned the gold standard, this caused inconvenience in exchanging process and difficult to value between different currencies. During that period, the average worldwide prices of goods fell by 48 percent worldwide and the value of international trade fell by 63 percent between 1929 and 1932[1].

In the early 1940s, Harry Dexter White in the United States and John Maynard Keynes in the United Kingdom proposed a system to be supervised permanent by a cooperative organization worldwide. The system should react to the needs of the time, encourage the unrestricted conversion of one currency into another, establish a clear and unambiguous value of each currency, and eliminate restrictions and practices that had brought the same situation in 1930s. After four years of discussions, constructions, and negotiations between each nation, the International Monetary Fund was finally established when 29 countries signed its "Articles of Agreement" or its charter at the conference held in Bretton Wood, New Hampshire, United States, from July 1 - 22, 1944, which 44 countries attended. The formation of International Monetary Fund constituted the core of the Bretton Woods System. The International Monetary Fund became official existence on December 27, 1945. It began operations in Washington D.C., United States in May 1946 and had financial operations on March 1, 1947.

[1] Driscoll (1998)

(2) Statutory Purposes

According to the "Articles of Agreement", the International Monetary Fund has six major statutory purposes that it needs to carry out through all of its functions and programs. The six statutory purposes summarized as follow:

1. To encourage international monetary cooperation through a permanent institution, which provides the basic guidance for consultation and collaboration on international monetary problems;
2. To enhance the expansion and balanced growth of international trade. In addition, the primary objective in economic policy for all of its members to follow will be in promoting and maintaining of high levels of employment and real income and to the development of the productive resources;
3. To promote currency exchange rate stability through maintaining orderly exchange arrangements among members, and avoiding competitive exchange rate depreciation;
4. To help in establishing of a multilateral system of payments in respect of current transactions between members and eliminate of foreign exchange restrictions which hamper the growth of world trade;
5. To give confidence to members by making the general resources of the Fund temporarily available to them in providing them with opportunity to correct short-term unbalance in their balance of payments without affecting the national or international economic situations;
6. In accordance with the above, the International Monetary Fund helps its members to shorten the duration and lessen the degree of disequilibrium in the international balances of payments.

(3) Membership, Quotas, and Voting

According to their countries' economic policies, all countries are free to join or quit their membership of the International Monetary Fund. When a country is willing to join, it adheres to the International Monetary Fund's charter of rights and obligations. Recently, all major countries are the International Monetary Fund members. The growth of membership is from 29 member countries in 1945 to 182 member countries in 2000.

Each member country contributes a certain sum of money, called "quota subscription", as a credit union deposit when they join the International Monetary Fund. The first purpose of the quota system is having a pool of money that the International Monetary Fund can draw and lend to its member countries with short-term financial difficulties. The second purpose is having the standard in determining on how much its member countries can borrow when they need to balance their foreign payments. The third purpose is to allocate the members' shares in Special Drawing Rights (SDR), which is a basket currency comprising major individual currency and will have more detail on page 11, in proportion corresponding to their quotas. The fourth purpose of quota is acting as a tool to allocate the voting power on the daily issues according to how much each country contributes to the International Monetary Fund.

The quota will review every five years according to the economy situations of its member countries. Therefore, each country can increase its voting power in the International Monetary Fund when doing the quota reviewing process. Recently, five members with largest proportion of quotas are the United States, Germany, Japan, France, and United Kingdom, which has the 18.25 percent, 5.67 percent, 5.67 percent, 5.10 percent, and 5.10 percent respectively.

(4) Organization and Operations

The fundamental operations of the International Monetary Fund depend on the decision of its members. They determine the policies of the organization to follow. The commands clearly run from each member to the International Monetary Fund and not vice versa. Therefore, the International Monetary Fund acts as an intermediary between the will of majority countries and the will of minority countries. In addition, the International Monetary Fund does not force its members to follow the policies that have been voted. However, the International Monetary Fund can exert moral pressure to encourage them to conform to the rules and regulations that they pledged to observe.

The organization of the International Monetary Fund is highly systematic. It has the Board of Governors at the head of the organization. The following one is the Executive Board, which consists of 24 executive members. Then, the Managing Director and Deputy Managing Directors. Under the supervision of Managing Director and Deputy Managing Directors, it has three finance-related departments included Investment Office-Staff Retirement Plan, Office of Budget & Planning, and Office of Internal Audit and Inspection. In addition, the Managing Director and Deputy Managing Directors oversee different specific areas including Area Departments, Functional and Special Services Departments, Information and Liaison, and Support Services. Each specific area has different departments and institutions to accomplish different tasks. **Exhibit 1.1** showed the International Monetary Fund Organization Chart. **Exhibit 1.2** had the brief description of each entity and its functions in the International Monetary Fund.

Exhibit 1.1
International Monetary Fund Organization Chart

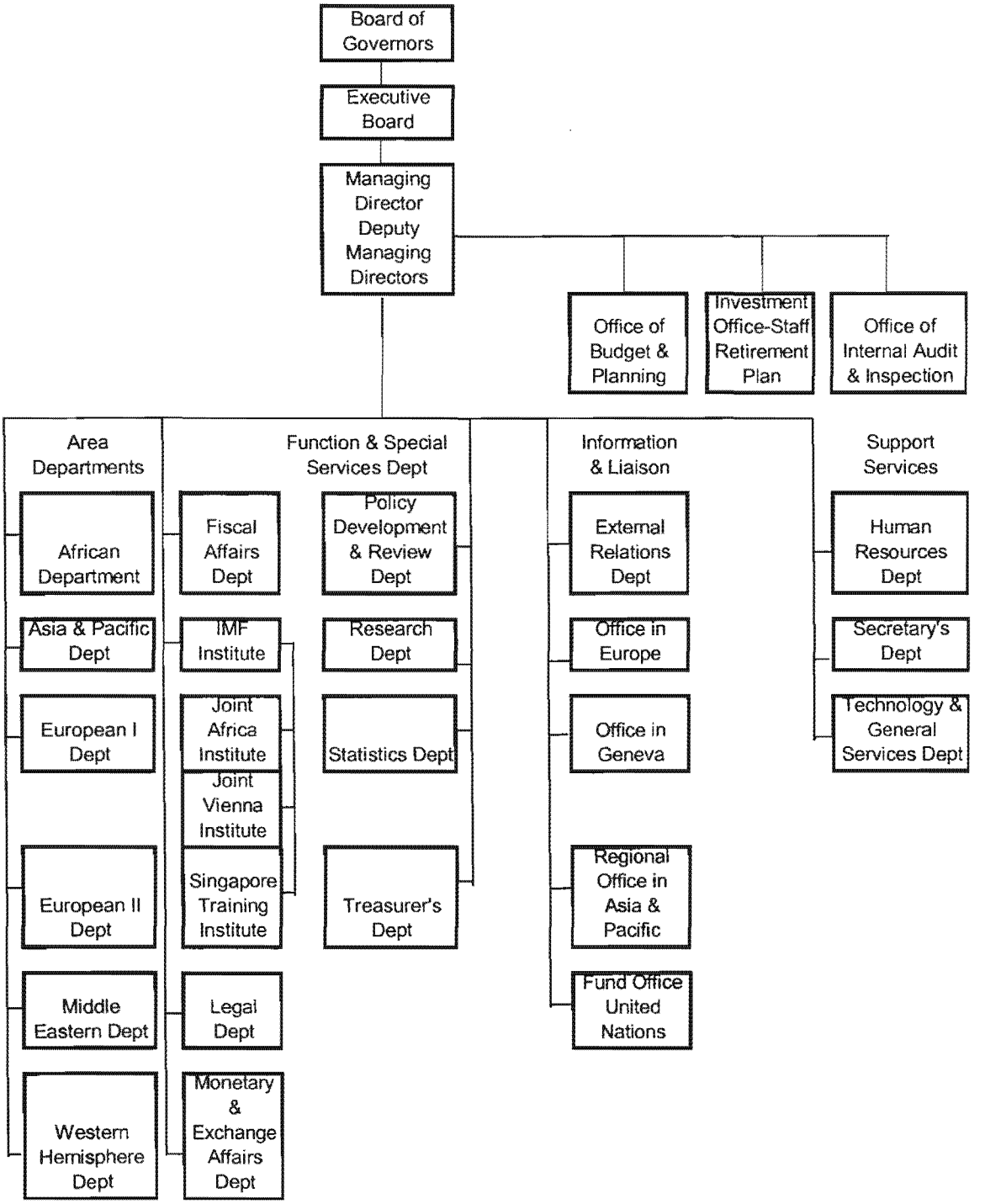

Exhibit 1.2

Brief description of each position in the International Monetary Fund

Entity	Description
Board of Governors	One from each of its members, which are ministers of finance or heads of central banks and they speak for their own government. The Interim Committee and IMF/ World Bank Development Committee provide special advices on the needs of poorer countries. They gather occasion of annual meetings to deal with IMF matters
Executive Board	24 executive directors meeting at least 3 times per week to supervise the implementation of policies approved from the Board of Governors. Recently, 8 executives each country, which are China, France, Germany, Japan, Russia, Saudi Arabia, the United Kingdom, and the United States. The other 16 executives each represent different group of remaining countries
Managing Director	Appointed by chairman of Executive Board. The Managing Director who is an European or at least a non-American heading the 2,600 staff of IMF from 122 countries and are international civil servants for world interests
Investment Office-Staff Retirement Plan	Attached to the Office of Managing Director. It deals with the issues on investment of the Fund and the retirement plan for the staff in organization
Office of Budget & Planning	Attached to the Office of Managing Director. It deals with the issues on budget planning for different departments and the whole organization for each fiscal year
Office of Internal Audit and Inspection	Attached to the Office of Managing Director. It acts as an third person to oversee of the whole organization. The responsible includes internal audit and inspection of different projects and departments
Area Departments	6 area departments cover geographical, include African, Asia and Pacific, European I and II, Middle Eastern, and Western Hemisphere Departments, are with at least one desk economist is assigned to each country. Responsibility of each economists are maintaining the Fund's relations with its members; develop and maintain database; keep track the economic development; and assist in preparing report for IMF's Executive Board.
Functional and Special Services Departments	The economic departments that cover a specific economic function instead of geographical area. They include Fiscal Affairs, IMF Institute, Monetary & Exchange Affairs, Legal, Policy Development and Review, Research, Statistics, and Treasurer's Department. All of the above departments work closely with Area Departments to enhance the operation of the IMF and in preparing report for IMF's Executive Board..
Information & Liaison	The economic departments that provide extra information and enhance the closer relationship with different members. It includes External Relations Department, Office in Europe, Office in Geneva, Regional Office for Asia and the Pacific, and Fund Office United Nations.
Support Services	3 departments that do the administrative work related to the daily operations in the organization. They include Human Resources Department, Secretary's Department, Technology and General Services Department.

(5) Roles and Functions

The International Monetary Fund has many roles and participates in different functions through different departments and institutions. One of the major roles of the International Monetary Fund is surveillance of its member countries. Currently, the open exchange system allows each member to choose its own method in determining the exchange value of its money. This leads to a wide range of exchange rate fluctuating. The advantage of the open system reflects the real value of the currency. In contrast, the disadvantage is countries can influence their market through controlling the currency value called dirty float. Therefore, this system requires greater transparency of its members' policies and permits more scope for the International Monetary Fund to monitor them. The International Monetary Fund appraises its members' foreign exchange policies according to the framework of analysis of the general economic situation and strategy of each member.

The second role of the International Monetary Fund acts as a consultant to each member country. It encourages its members to eliminate the imposed restrictions in transferring currency from its currency to other. It strongly recommends its members to act openly and responsibly in setting fair conditions for public or private currency exchange. In addition, it publishes the International Financial Statistical Yearbook, World Economic Outlook, and other economic-related research papers.

The third role of the International Monetary Fund provides financial assistance to each member country. The financial assistance includes credits and loans extension to its members with balance of payment problems in supporting policies of adjustment and economic reform. Each member country can immediately withdraw 25 percent from its

quotas that already paid to the International Monetary Fund. The country can borrow more capital from the Fund if the initial amount is not enough. They can borrow cumulatively three times of what they paid as a quota subscription within a year. The borrower supposes to return the borrowing amount as soon as possible in order to maintain the fund available for the future use. One of the reasons for its members in borrowing is spending more than it takes. Therefore, country should have certain kind of financial policy reform in order to improve the unfavorable situation. The service charge for the borrower is ¼ of 1 percent of the amount borrowed and interest charge is 4 ½ percent.

The fourth role of the International Monetary Fund provides technical assistance to its member. The technical assistance includes expertise and support provided through its several broad area such as design and implementation of fiscal and monetary policy, the Singapore Training Institute, and other different programs.

The fifth important role of the International Monetary Fund is having the power to issue the asset called the Special Drawing Right (SDR), which is a basket currency comprising major individual currency, that its members can add to the holdings of foreign currencies and gold they keep in their central banks. This allows its members to do transactions among themselves or with the International Monetary Fund in foreign exchange or payments.

Summary

We already covered different areas in history, statutory purposes, membership, quotas, and voting, organization and operations, and role and functions of the International Monetary Fund. In general, the International Monetary Fund acts like ordinary money fund or credit union that lends money to the borrowers and expects the borrowers in return on principal with interest as soon as possible. In the International Monetary Fund, the borrowers are different countries and all its members act as a lender. When countries request financial assistance, the International Monetary Fund believes that the borrowers in facing financial difficulties because of the poor financial regulations and structures. In ensuring the return from borrowers, the agreements between International Monetary Fund and countries will have different economic and financial reform provisions in order to improve the current inappropriate financial regulations and structures with guarantee in return. The bailout programs granted to Thailand, Indonesia, and South Korea during the Asian Financial Crisis 1997 - 98, for example, which details will present in Chapter 2 and Chapter 3. All of these bailout programs were associated with provisions that each of them need to strictly follow. In the Section B, I will explore economic performance of the Asian region in 1987 - 96, ten years before the Asian Financial Crisis.

Section B

Overview of Asian Economy from 1987 to 1996

During the past decade, a set of Asian countries' economy was growing at an extraordinary rate. This extraordinary growth rate was, basically, because of the appropriate government financial policies and the increasing of the openness to the Western World[2]. In addition, the Western World allowed large amount of capital flows toward different Asian countries, which the rate of return was much higher than the developed countries in the Western world. Consequently, most of the Asian countries had its growth rate as much as twice over the Western developed countries.

In this Section, I will present different macroeconomic and financial factors that indicate the extraordinary growth of Asian economy from 1987 - 96. These factors included: (1) GDP growth rate; (2) inflation rate; (3) unemployment rate; (4) stock market indices; (5) import, export, and trade balance; (6) interest rate; and (7) foreign exchange rate. All of the data are from International Financial Statistics Yearbook, Asian Development Bank, and Datastream.

(1) GDP Growth Rate

Over the period of 1987 - 96, the economy performance of the Asian countries, in average, had outperformed the other developing countries, such as the region of Africa, Middle East, and Western Hemisphere. As the whole of all the regions of developing countries, it outperformed the category of industrial countries. The average GDP growth between Industrial and Developing Category from 1987 – 96 presented in **Table 1.1**,

[2] Helliwell (1996)

which the percentage change over previous year. The average GDP growth of the developing countries categories was 2.7 percent per annum more than the category of Industrial countries. In the period from 1991 to 1996, the average GDP growth of the developing countries was much higher than the average GDP growth of the industrial countries.

Table 1.1
Average GDP growth between Industrial and Developing Category, 1987 – 1996
(% change over previous year)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	AVE
(1) Developing Countries	5.0	4.9	3.4	4.1	4.0	5.6	6.1	6.4	5.5	6.2	5.1
(2) Industrial Countries	3.2	4.3	3.2	2.1	1.1	1.7	1.0	2.9	2.2	2.5	2.4
Difference between (1) and (2)	1.8	0.6	0.2	2.0	2.9	3.9	5.1	3.5	3.3	3.7	2.7

Source: International Financial Statistics Yearbook, 1999.

Within the category of developing countries, which included the region of Africa, Asia, Middle East, and Western Hemisphere, the most outstanding economy performance was the Asian region. The average GDP growth in the region of Developing countries from 1987 – 96 presented in **Table 1.2,** which percentage change over previous year. The average GDP growth of the Asian region was 7.72 percent per annum, which was 5.61 percent per annum more than the average of Africa region, 3.69 percent per annum more than the average of Middle East region, and 5.01 percent per annum more than the average of Western Hemisphere region. The only exception was the Middle East region, which had its average GDP growth greater than the average of the Asian region in 1990.

From the above demonstration, it clearly shows that the economy growth of the Asian region during the 1987 - 96 faster than the other regions within Developing countries category, and is much faster than the growth rate of the Industrial countries category. However, the income base of the Asian region is starting at a very low level,

and the total GDP of the Asian region contributes to the world is less than a quarter of the world's total GDP[3]. Countries started with lower incomes will grow faster relative to the initial richer countries because of the effect of convergence[4]. Therefore, the Asian countries are following the trend of having high growth rate because of the low-income base when comparing with other countries in the world.

Table 1.2
Average GDP growth in the region of Developing countries, 1987 – 1996
(% change over previous year)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	AVE
Africa	1.9	5.0	3.0	2.9	1.3	-0.8	0.9	2.8	2.0	NA	2.11
Asia	7.8	9.2	5.6	5.6	6.2	8.9	8.4	9.2	8.6	7.8	7.72
Middle East	4.5	0.8	1.7	8.2	5.9	4.8	3.7	3.2	3.5	5.3	4.03
Western Hemisphere	3.2	0.8	1.8	2.4	3.6	2.7	4.3	4.7	0.9	3.5	2.71

Source: International Financial Statistics Yearbook, 1999.

Within the Asian region, I select ten of them to be my observed sample in order to identify the extraordinary growth. The ten countries in the region are: China, Hong Kong, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand. Obviously, these countries, except Japan, achieved enormous growth within the period of 1987 - 96. These countries categorize into four categories. The first category is Japan as an industrial country. The second category is China because of its population size. The third category is NIE includes Hong Kong, South Korea, Singapore, and Taiwan. The fourth category is ASEAN-4 includes Indonesia, Malaysia, the Philippines, and Thailand.

Table 1.3 presented the average GDP growth rate of Japan, China, NIE, and ASEAN-4, in percentage change over previous year, from 1987 - 96. The growth rates of NIE were always outperforming the Japan as whole. Within the sample period, Hong

[3] Helliwell (1999)

Kong, Singapore, Korea, and Taiwan had average growth rate of 2.79 percent per annum, 5.92 percent per annum, 5.24 percent per annum, and 3.39 percent per annum over the Japan growth rate respectively. Since, the average GDP growth rate of Japan was around 1 percent per annum from 1992 to 1995. Therefore, NIE growth rate outperformed Japan's growth rate. In China, the average growth rate was 10.04 percent per annum, which was higher than the growth rate of ASEAN-4 countries, which the average growth rate of Indonesia, Malaysia, the Philippines, and Thailand were 6.91 percent per annum, 8.51 percent per annum, 3.71 percent per annum, and 9.49 percent per annum respectively. In China, the growth rate dropped tremendous during 1989 and 1990 after the Tiannamen Square event. Then, it bounced back again in 1991. In the Philippines, the growth rate was -0.6 percent per annum in 1991 and 0.3 percent per annum in 1992, then it bounced back after 1993. The growth rates of Indonesia, Malaysia, and Thailand, were always between 7 percent per annum and 9.5 percent per annum. Hence, the average GDP growth rate of China and ASEAN-4 countries were also higher than Japan's average GDP growth rate. **Exhibit 1.3** illustrated a better view on comparison of average GDP growth among all four categories in the Asian region with the world average.

From the above ten countries that I observed, all of them had higher GDP growth rate than the world average, except Japan. According to Rhower (1995), the expectation of Asian economy will produce 40 percent of the world's GDP while US and European is 18 percent and 14 percent respectively[5]. Before the Asian Financial Crisis, the GDP growth rate of the Asia region was higher rate than the world average.

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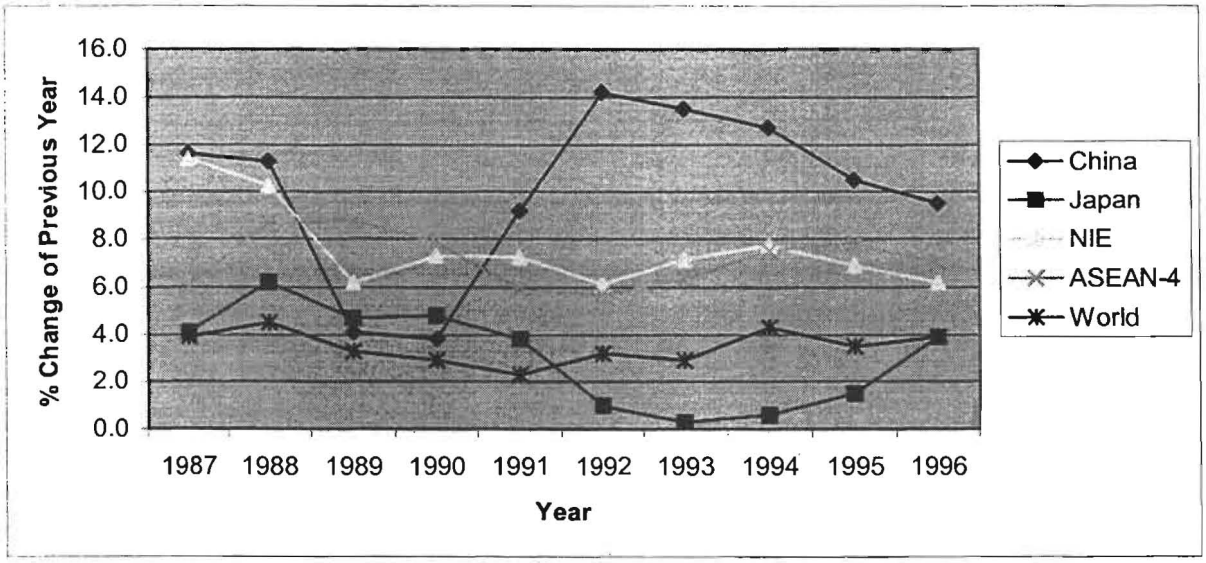
[4] Helliwell (1999)
[5] Rohwer (1995)

Table 1.3
Average GDP growth rate of Japan, China, NIE, and ASEAN - 4, 1987 - 1996
(% change over previous year)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	AVE
Japan	4.1	6.2	4.7	4.8	3.8	1.0	0.3	0.6	1.5	3.9	3.09
China	11.6	11.3	4.1	3.8	9.2	14.2	13.5	12.7	10.5	9.5	10.04
Hong Kong	13.0	8.0	2.6	3.4	5.1	6.3	6.1	5.4	3.9	5.0	5.88
Singapore	9.7	11.6	9.6	9.0	7.3	6.3	10.4	10.4	8.8	7.0	9.01
Korea	11.5	11.3	6.4	9.5	9.1	5.1	5.8	8.6	8.9	7.1	8.33
Taiwan	NA	NA	NA	NA	7.6	6.8	6.3	6.5	6.0	5.7	6.48
Indonesia	4.9	5.8	7.5	7.2	7.0	6.5	6.5	7.5	8.2	8.0	6.91
Malaysia	5.4	8.8	9.2	9.7	8.6	7.8	8.3	9.2	9.5	8.6	8.51
Philippines	4.3	6.8	6.2	3.0	-0.6	0.3	2.1	4.4	4.8	5.8	3.71
Thailand	9.5	13.3	12.2	11.6	8.6	8.1	8.4	8.9	8.8	5.5	9.49
World	3.9	4.5	3.3	2.9	2.3	3.2	2.9	4.3	3.5	3.9	3.47

NA: Not available
Source: International Financial Statistics Yearbook, 1999.
In exception, Taiwan, from Asian Development Bank.

Exhibit 1.3
Average GDP growth of Japan, China, NIE, and ASEAN-4, 1987 - 1996



(2) Inflation Rate

Table 1.4 showed a clear picture of the inflation rate of the ten sample countries in the Asian region from 1987 to 1996. It showed the ten sample countries with a relatively low and constant inflation rate annually within the sample period. Five

countries, included Japan, Singapore, Taiwan, Malaysia, and Thailand, had inflation rate either around or below 5 percent per year. The other four countries, which included Hong Kong, Korea, Indonesia, and the Philippines, had inflation rate between 5 to 10 percent per annum. The inflation rate of China was around 12 percent per annum.

Although the inflation rate was relatively low and constant in general, they had some exceptions in China, Hong Kong, and the Philippines. In China, the inflation rate was over 15 percent from 1988 to 1989, and then it decreased below 5 percent from 1990 to 1992. The inflation rate rose to 14 percent, 24 percent, and 16 percent for 1993, 1994, and 1995 respectively. Finally, it dropped around 8 percent in 1996. In Hong Kong, the inflation rate of 1991 is around 11 percent, and then it decreased continuously and finally at 6.3 percent in 1996. In the Philippines, the inflation rate was around 12 percent, 14 percent, and 18 percent for 1989, 1990, and 1991. Then, it decreased around 7.5 percent to 9 percent on the year from 1992 to 1996.

Table 1.4
Inflation rate of Japan, China, NIE, and ASEAN-4, 1987 – 1996
(% change over previous year)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Japan	0.1	0.7	2.3	3.1	3.3	1.7	1.3	0.7	-0.1	1.7
China	7.2	18.7	18.3	3.1	3.5	6.3	14.6	24.2	16.9	8.3
Hong Kong	NA	NA	NA	NA	11.6	9.3	8.5	7.8	9.0	6.3
Singapore	0.5	1.5	2.3	3.5	3.4	2.3	2.3	3.1	1.7	1.4
Korea	3.0	7.1	5.7	8.6	9.3	6.2	4.8	6.2	4.5	4.9
Taiwan	NA	NA	NA	NA	3.6	4.5	2.9	4.1	3.8	3.0
Indonesia	9.3	8.0	6.4	7.8	9.4	7.5	12.5	9.6	9.0	6.6
Malaysia	0.3	2.6	2.8	2.6	4.4	4.8	3.5	3.7	5.3	3.5
Philippines	3.8	8.8	12.2	14.1	18.7	8.9	7.6	9.1	8.1	8.4
Thailand	2.5	3.8	5.4	6.0	5.7	4.1	3.4	5.0	5.8	5.8

NA: Not available
Source: International Financial Statistics Yearbook, 1999.
In exception, Taiwan, from Asian Development Bank.

(3) Unemployment rate

The unemployment rates of the sample countries were extremely low. Nearly most of their unemployment rate was around 2 to 4 percent per annum. In exception, the Philippines unemployment rate was around 9 percent annually. Malaysia started with 7 percent in 1987 and declined to 2 percent in 1996. **Table 1.5** presented the overview of the unemployment rate of the sample Asian countries from 1987 - 96. Note that the Taiwan data of unemployment rate is not available upon my resources.

Table 1.5
Unemployment rate of Japan, China, NIE, and ASEAN 4, 1987 - 1996
(Period average in %)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Japan	2.8	2.5	2.3	2.1	2.1	2.2	2.5	2.9	3.2	3.4
China	2.0	2.0	2.6	2.5	2.3	2.3	2.6	2.8	2.9	3.0
Hong Kong	1.7	1.4	1.1	1.3	1.8	2.0	2.0	1.9	3.2	2.8
Singapore	4.7	3.3	3.2	1.7	1.9	2.7	2.7	2.6	2.7	3.0
Korea	3.1	2.5	2.6	2.4	2.3	2.4	2.8	2.4	2.0	2.0
Taiwan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indonesia	2.6	2.8	2.8	2.5	2.6	2.7	2.8	4.4	NA	NA
Malaysia	7.3	7.2	6.3	5.1	4.3	3.7	3.0	2.9	2.8	2.6
Philippines	9.1	8.3	8.4	8.1	9.0	9.8	9.3	9.5	9.5	NA
Thailand	5.9	3.1	1.4	2.2	2.7	1.4	1.5	NA	NA	NA

NA: Not available
Source: International Financial Statistics Yearbook, 1999.

(4) Stock Market Indices

Table 1.6 reported the performance of different countries' stock market indexes. The majority of the stock market indexes were in the upward, increasing trend. These countries included China (Shanghai Stock Exchange Composite price index), Hong Kong (Hang Seng price index), Singapore (Singapore Straits Times (new) price index), Indonesia (Jakarta Stock Exchange Composite price index), Malaysia (Kuala Lumpur Composite price index), and the Philippines (Philippines Stock Exchange Composite price index). The performance of Japan (Nikkei 225 Stock Average price index) market

increased from 21,564 points in 1987 to 38,916 in 1989, then it declined to 23,916 in 1990 and to 19,361 in 1996. For Taiwan (Taiwan Stock Exchange Weighted price index), it rose to 9,624 in 1989, then dropped to 4,530 points in 1990, bounced back to 6,000 points in 1993, and ended at 7,000 points in 1996. Korea (Korea Stock Exchange Composite (KOSPI) price index) market increased from 518 in 1987 to 1,027 in 1994, then it declined to 651 in 1996. Thailand (Bangkok S.E.T. price index) market started at 285 in 1987. It rose to 1,360 in 1994 then ended at 832 in 1996.

According to the performance of stock market, we observed that the Asian stock exchange markets were in the bull market for nearly ten years, in exception of Japan, Taiwan, Korea, and Thailand stock market.

Table 1.6
Stock Indexes of Japan, China, NIE, and ASEAN-4, 1987 – 1996

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Japan	21,564	30,159	38,916	23,849	22,984	16,925	17,417	19,723	19,868	19,361
China	N/A	N/A	N/A	N/A	293	780	834	648	555	917
Hong Kong	2,303	2,687	2,837	3,025	4,297	5,512	12,086	8,191	10,073	13,451
Singapore	688	854	1,166	947	1,215	1,240	2,112	1,854	1,917	1,992
Korea	518	907	910	696	610	678	879	1,027	883	651
Taiwan	2,340	5,119	9,624	4,530	4,601	3,377	6,071	7,111	5,159	6,934
Indonesia	83	305	399	418	247	274	590	470	514	637
Malaysia	261	357	562	506	556	644	1,289	971	995	1,238
Philippines	813	847	1,105	651	1,152	1,256	3,272	2,798	2,594	3,170
Thailand	285	387	879	613	711	893	1,683	1,360	1,281	832

NA: Not available
Source: DataStream.

(5) Import, Export and Trade Balance

The trade balance represents the net exports, either total amount of exports minus total amount of imports. When trade balance is in deficit, which implies the country import more than export, this led to trade imbalance that its trading partners will have trade surplus. The situation can be vice versa if the country export more than import.

When trade deficit continuously, this will exert pressure on the country currency to depreciate in order to have higher export and decrease import, either competitiveness.

Table 1.7 showed the trend of the trade balance through 1987 - 96. Within the sample, only Japan, Taiwan, and Indonesia had positive trade balance throughout the sample period. Singapore, the Philippines, and Thailand had negative trade balance throughout the ten years. China had four years trade deficit from 1987 - 89 and 1993. Hong Kong, after the 0.01 billions US dollar trade surplus, the following nine years were in trade deficit with the amount of 17.8 billions US dollar at the end of 1996. In Korea, the situation was similar to Hong Kong, the trade deficit started in 1990 and the amount of 20.62 billions of US dollar at the end of 1996. In Malaysia, the trade balance were stable with a range from -4 billions to 6 billions US dollar in surplus. Overall, seven out of ten Asian countries experienced in trade deficit.

Table 1.7:
Trade balance in Japan, China, NIE, and ASEAN –4, 1987 - 1996
(Billions of US Dollars)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Japan	80.25	77.48	64.22	52.21	77.79	106.64	120.62	121.77	107.23	61.75
China	-3.78	-7.75	-6.60	8.75	8.12	4.36	-12.12	5.37	19.68	12.25
Hong Kong	0.01	-0.73	0.98	-0.33	-1.66	-3.92	-3.41	-10.44	-19.00	-17.80
Singapore	-3.87	-4.56	-5.00	-8.15	-7.27	-8.70	-11.22	-5.84	-6.24	-6.32
Korea	6.26	8.89	0.91	-4.83	-9.66	-5.14	-1.56	-6.33	-10.06	-20.62
Taiwan	18.68	10.73	13.58	12.31	13.04	9.21	7.58	7.34	7.89	14.44
Indonesia	4.77	5.97	5.80	3.84	3.27	6.69	8.50	8.07	4.79	6.89
Malaysia	5.24	4.56	2.58	0.16	-2.30	0.79	1.47	-0.76	-3.74	-0.10
Philippines	-1.50	-1.69	-3.42	-4.97	-4.02	-5.70	-7.67	-9.24	-10.84	-13.71
Thailand	-1.37	-4.33	-5.69	-10.31	-9.16	-8.21	-9.15	-9.20	-14.34	-5.42

Source: International Financial Statistics Yearbook, 1999.
In exception, Taiwan, from Asian Development Bank.

(6) Interest Rate

Table 1.8 presented the average interest rate of the ten observed Asia countries. In Japan, the average interest rate ranged between 0.50 percent in 1995 and 1996 to 6.00

percent in 1990, which were extremely low. In China, the average interest rate was around 7 percent to 10.50 percent in the sample period. In the category of NIE, the average interest rate fluctuated around 2 percent from 1987 - 96. For the ASEAN-4 countries, Indonesia interest rate was around 18 percent in 1990 and 1991, and then it dropped to 12 percent to 13 percent in the following years. In Malaysia, the average interest rate was below 5 percent in 1987, 1988, and 1989, and then rose to 7 percent in 1990, 1991, and 1992. The average interest rate was ranged 4 percent to 7 percent from 1993 to 1996. The Philippines with average interest rate around 10 percent to 14 percent and Thailand average interest rate was around 8 percent to 12 percent.

Table 1.8
Average interest rate of Japan, China, NIE, and ASEAN- 4, 1987 – 1996
(end of period % per annum)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Japan	2.50	2.50	4.25	6.00	4.50	3.25	1.75	1.75	0.50	0.50
China	NA	NA	NA	7.92	7.20	7.20	10.08	10.08	10.44	9.00
Hong Kong	NA	NA	NA	NA	NA	4.00	4.00	5.75	6.25	6.00
Singapore *	3.89	4.30	5.34	6.61	4.76	2.74	2.50	3.68	2.56	2.93
Korea	7.00	8.00	7.00	7.00	7.00	7.00	5.00	5.00	5.00	5.00
Taiwan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indonesia	NA	NA	NA	18.83	18.47	13.50	8.82	12.44	13.99	12.80
Malaysia	3.20	4.12	4.89	7.23	7.70	7.10	5.24	4.51	6.47	7.28
Philippines	10.00	10.00	12.00	14.00	14.00	14.30	9.40	8.30	10.83	11.70
Thailand	8.00	8.00	8.00	12.00	11.00	11.00	9.00	9.50	10.50	10.50

NA: Not available
Source: International Financial Statistics Yearbook, 1999.
** Money market rate, others are Central Bank Discount rate.*

In supplement, for each of the country portfolio, they had an average interest rate in the trend of two directions, increasing and decreasing within the sample period. In exception of Japan, it had extremely low average interest rate

Base on the interest rate parity (IRP) that if the countries control their interest rate within certain range, the currency exchange rate will also within certain range without

large amount of fluctuation due to the forward rate of the currency is keeping in a predictable manner. In addition, when the central bank keeps the interest rate steady, this will increase the incentives of borrowing money to do investment. This is because the borrowers can have a better foresight of the interest expense in the future. Hence, this will enhance the economic situation indirectly.

(7) Exchange Rate

In our sample countries, each of them has different currency exchange rate policy. In Japan (Yen) and the Philippines (Peso), the exchange rate arrangement is in the form of more flexible and independently floating. In China (Yuan), Indonesia (Rupiah), Korea (Won), Malaysia (Ringgit), Taiwan (New Taiwan Dollar), and Singapore (Singapore Dollar), their exchange rate policy is in the more flexible other managing floating, such as real exchange rate targeting. Hong Kong (Hong Kong Dollar) pegs to US dollars and Thailand (Baht) pegs to other composite with various baskets of currencies.

In **Table 1.9**, the data of the exchange rate for the sample presented in terms of country currency per US dollars. The Japanese Yen appreciated throughout ten years, it started from 144 to 1 US dollar in 1987 and ended up at 109 to 1 US dollar in 1996. The Chinese Yuan depreciated from 3.7 to 1 US dollar in 1987 to 8.4 to 1 US dollar in 1996. In Hong Kong, the Hong Kong dollar pegged to the US dollar in the range of 7.70 to 7.80 per US dollar. The Singapore dollar appreciated from 2.11 per US dollar in 1987 to 1.41 per US dollar in 1996. In Korea, the Won appreciated from 1987 to 1990 (from 825 Won per US dollar to 670 Won per US dollar), and then depreciated in 1991 to 1993 (from 700 Won per US dollar to nearly 800 Won per US dollar), finally the Won was quoted

between very narrow ranges from 800 won to 700 won per US dollar. In Taiwan, the currency was targeted to within the range of 25 NTD to 27 NTD per US dollar. The Indonesia Rupiah depreciated from 1600 rupiah in 1987 to 2400 rupiah in 1996. The Malaysia Ringgit managed to float within the range of 2.5 Ringgit per US dollar in 1987 and 2.7 Ringgit per US dollar in 1996. The Philippines Peso fluctuated between 1987 and 1995, and then fixed in the range of 26.22 Peso per US dollar in 1994, 1995, and 1996. The Thailand Baht fixed between 25.10 and 25.80 per US dollar for the whole sample period.

Table 1.9
Exchange rate of Japan, China, NIE, and ASEAN-4, 1987 - 1996
(country's currency to US Dollar, Period Average)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Japan	144.64	128.15	137.96	144.79	134.71	126.65	111.20	102.21	94.06	108.78
China	3.72	3.72	3.77	4.78	5.32	5.51	5.76	8.62	8.35	8.31
Hong Kong	7.80	7.81	7.80	7.79	7.77	7.74	7.74	7.73	7.74	7.73
Singapore	2.11	2.01	1.95	1.81	1.73	1.63	1.62	1.53	1.42	1.41
Korea	822.57	731.47	671.46	707.76	733.35	780.65	802.67	803.45	771.27	804.45
Taiwan	NA	NA	NA	26.89	26.82	25.16	26.39	26.46	26.49	27.46
Indonesia	1643.80	1685.70	1770.10	1842.80	1950.30	2029.90	2087.10	2160.80	2248.60	2342.30
Malaysia	2.52	2.62	2.71	2.70	2.75	2.55	2.57	2.62	2.50	2.52
Philippines	20.57	21.10	21.74	24.31	27.48	25.51	27.12	26.42	25.71	26.22
Thailand	25.49	25.21	25.82	25.11	25.47	25.39	25.35	25.01	25.14	25.49

NA: Not Available
Source: International Financial Statistics Yearbook, 1999.
In exception, Taiwan, from Asian Development Bank.

From the above, each country foreign exchange rate fluctuates in a certain range or depreciates in terms of the US dollar (except Japanese Yen). These help its currency to be more attractive to other nation investors to invest in their country because of the low currency risk or the cost is comparative cheaper than other countries. Although this policy can attract foreigners to invest into their country, it alters the currency exchange rate that reflects the real economic situation. In addition, it is against the auto-adjustment

of the balance of payment through the currency market. According to interest rate parity relationship in foreign exchange market, when interest rate increase, the value of the home currency will depreciate in the financial market is in equilibrium. In reality, the currencies did not depreciate in the market during 10 years period because of the fixed or targeting exchange rate for some Asian countries. This implies governments had certain policies to control the exchange rate in order to have a favorable situation for foreign investors.

Summary

From the above, we concluded that the common economic and financial features among the sample Asian countries that contributed to the enormous growth in Asia. These factors which included with high GDP growth rate, relatively low and constant inflation rate, low unemployment rate, "bull" market in stock exchange, high trade imbalance, predictable interest rate, and fixed exchange rate against US dollar. All of these show the positive signal to the Asian economic, except the high trade imbalance. As the trend of extraordinary growth continuous, why the Asian Financial Crisis happened in 1997? What are the major reasons changed the growth trends into reverse directions with negative growth rate after 1997? Chapter 2 will answer these questions accordingly.

Chapter 2

Roles of IMF during the Asian Financial Crisis

Chapter 1 provides us an overview of the International Monetary Fund and the Asian countries' economic performance before the Asian Financial Crisis. Before the onset of the Crisis, the economic background in Asian countries had a solid, fast, and optimistic growth through several decades after the World War II. For instance, the economic growth rate of last ten years, averagely, was doubled the Industrial countries according to the findings in Chapter 1. In these optimistic and healthy economic environments among the Asian countries, except Japan, why the Asian Financial Crisis occurred? In addition, what is the role of International Monetary Fund during the Asian Financial Crisis? I will clarify these questions in this chapter through two sections.

Section A will make a brief summary of all major events occurred during the Asian Financial Crisis from 1997 to 1998. Within this section, it will cover the International Monetary Fund responses to different Asian countries. In particular, announcements to Thailand, the Philippines, Malaysia, Indonesia and South Korea, and the specific bailout programs for Thailand, Indonesia, and South Korea. The details of each bailout programs will discuss in Chapter 3. Section B will dissect the causes of the Asian Financial Crisis in conducting a survey of different related arguments and viewpoints from different economists and financial analysts.

Section A

Chronology of Asian Financial Crisis from 1997 to 1998

In the year of 1997 and 1998, the Asian economy was in turmoil. The expectation of the future economic performance changed from optimistic to pessimistic within few months. Within this period, it had many critical events that contribute to the causes of the bailout programs that granted by the International Monetary Fund during the Crisis. The entities involved into Crisis which included the International Monetary Fund, Thailand, the Philippines, Indonesia, Malaysia, South Korea, Japan, Hong Kong, Singapore, different major international banks, and international hedge funds.

In the following, I will go through these major events in three periods: (1) period before the Crisis (from January 1997 to June 1997), (2) period during the Crisis (from July 1997 to January 1998), (3) period of re-evaluation of the bailout programs (February 1998 to December 1998). All of the following chronology details based on the information from several news sources, included Reuters, Wall Street Journal, New York Times, CNNfn, Financial Times, Bloomberg, and Chronology of the Asian Currency Crisis and its Global Contagion by Roubini.

(1) Period before the Crisis (January 1997 to June 1997)

In the period before the Asian Financial Crisis, it had eight major events that led to the onset of the Crisis. Most of these events occurred in Thailand and only one event related to the International Monetary Fund.

The first major event related to Thailand was, which announced on March 10, the Thai government reneged on its promise to buy back $3.9 billion in bad property debt

from financial institutions. On the same day, Michel Camdessus, who was the International Monetary Fund Managing Director, responded that he did not see the reason for the crisis to develop further. Later, on May 14-15, Thailand currency (Baht) was attacked massively by speculators because of the economy slowdown and political instability. Thailand and Singapore jointly intervene in defending the Thai Baht. In the same month, Thailand failed to save the largest financial company, Finance One, that its problems became more obvious. On June, the reassignment of Thailand's finance minister and Thai Central Bank suspended operation of 16 cash-strapped finance companies that lead to the expectations of the Thailand's economy will collapse because of political and banking system further instability.

(2) Period during the Crisis (July 1997 to January 1998)

Within this period, most of the major events and announcements related to the International Monetary Fund, Thailand, the Philippines, Indonesia, and South Korea. The International Monetary Fund provided three independent bailout programs to Thailand, Indonesia, and South Korea within this period respectively without enough time to identify problems and construct appropriate agreement policies. Each program in attachment with terms and regulations, which requires each country to follow, will illustrate in Chapter 3.

Before the Crisis, different countries' stock markets and foreign exchange markets were not heavily affected by the events occurred in Thailand before July 1997. Thai government abandoned its managed currency float on July 2, which marked as the starting date of the Crisis, changing the situations dramatically. From July 2 to the end of

January 1998, the Asian countries' stock markets, foreign exchange market, and interest rate crashed. We define this period as the core Crisis period with the International Monetary Fund played an important role in the four Asia courtiers, included Thailand, the Philippines, Indonesia, and South Korea. These countries associated with the highest exposure to the Crisis than other Asian countries.

IMF and Thailand

On July 2, the Bank of Thailand announced a managed float of the Baht that they give up the intervention of its currency. In addition, Thai called to the International Monetary Fund for "technical assistance". This day is considered the trigger event of the Asian Financial Crisis. After the announcement of Thailand, the Baht effectively devalued by about 15 - 20 percent with a record low of 28.80 to one US dollar. On July 28, Thailand called in the International Monetary Fund for technical assistance. The second Asian country asked for help from International Monetary Fund after the Philippines in extension of Extended Fund Facility (EFF). The Philippines program not considered as one of the bailout programs provided by the International Monetary Fund in this literature.

On August 5, Thailand unveiled austerity plan and followed the International Monetary Fund rescue package with suggested policies. The Central Bank suspended 48 finance firms. Six days later, on August 11, the International Monetary Fund announced the rescue package for Thailand included loans totaling in 16 billion US dollar from the International Monetary Fund and other Asian nations. On August 20, the International Monetary Fund approved a 3.9 billion US dollar credit for Thailand. At this moment, the

rescue package is 16.7 billion US dollar in total. The Thailand rescue package is the first official bailout package assigned from the International Monetary Fund to Asian region with detail regulations and monetary policies. Thailand required following all of the detail regulations and policies.

On November 25, 1997, the International Monetary Fund provided the first modification to the initial programs. On January 1998, Thailand announced that it would ask the International Monetary Fund to ease the terms of its 17.2 billion US dollar bailout package and its currency regulations. The first country asked for easing the terms in the bailout package.

IMF and the Philippines

The same day as Thailand abandoned its intervention of its currency, on July 2, the Philippines Central Bank forced to intervene heavily in defending Peso. The first announcement related to the International Monetary Fund during this period was on July 11, which the Philippines Central Bank allowed the Peso to move in a wider range against the US Dollar. As the International Monetary Fund backed the announcement from the Philippines, the Managing Director would recommend the International Monetary Board to approve the Philippines' request in an extension of its Extended Fund Facility (EFF). On July 14, the International Monetary Fund offered the EFF program to the Philippines during the Asian Financial Crisis. The Philippines received almost 1.1 billion US dollar in financial support under the fast-track regulations.

IMF and Malaysia

Later of the week after Thai Baht devalued, On July 8, Malaysia Central Bank forced to intervene heavily in defending its Ringgit. On the same day as the International Monetary Fund offered the US$1.1 billion financial support to the Philippines, on July 14, Malaysia Central Bank abandoned the defense of Ringgit. On July 24, Malaysia Ringgit hit 38-month low of 2.6530. On September 20, Prime Minister Mahathir Mohamad told currency trading was immoral and should be stopped during the IMF/World Bank annual conference, held in Hong Kong. Between the International Monetary Fund and Malaysia, Malaysia did not receive any support programs from International Monetary Fund and was the only country with high exposure during the Asian Financial Crisis without support program.

Upon the end on July 1997, the currency of Thailand Baht, the Philippines Peso, Singapore Dollar and Malaysia Ringgit had already abandoned the intervention or peg of their currency and with a high depreciation rate against US dollar. In addition, the Thailand crisis spread to other Asian countries and became the Asian Financial Crisis.

IMF and Indonesia

On August 14, Indonesia allowed its currency in the floating rate. The Rupiah plunged to 2,755 against US dollar with high interest rate. On October 8, Indonesia announced to ask the International Monetary Fund for financial assistance. At the end of October, the International Monetary Fund provided 23 billion US dollar financial support

package to Indonesia. This is the second bailout package assigned to the Asian region, which the details of bailout package will cover in Chapter 3.

On November 6, the International Monetary Fund Managing Director said that the package for Indonesia should break the viscious cycle of economic destabilization in Asia. Later on December 8 - 9, rumors that president Suharto is gravely ill and sending the Rupiah into a tailspin. Since then, the initial bailout program did not implement effectively. After several negotiations and clarifications, on January 15, 1998 and January 27, 1998, President Suharto announced a wide-range economic reform that would overturn the current economic situations. This reform, with modification on the initial program, restored confidence in its banking sector, guarantied commercial bank obligations and allowed overseas investment in local banks. In particular, the International Monetary Fund's bailout programs established.

Upon the end of August, Indonesia Rupiah was forced to abandon the fixed exchange rate and with the high depreciation rate. In total, six countries' currencies already affected by the Crisis.

IMF and South Korea

On November 6, 1997, the Bank of Korea once again intervened in attempting to halt the local currency slide versus the US Dollar. On November 17, South Korea abandoned its defense of the Won and aftermath the currency smashing through the 1,000/US Dollar level. At first, South Korea tried to handle the problems through reforming the countries banking sectors. On November 14, the majority parties vowed to

pass a reform package to clean up debt-ridden banks. Unfortunately, the Financial Reform Bills was unable to pass on November 18. On November 20, the South Korea Won fell 10 percent in one trading day. Next day, November 21, South Korea asked a rescue package from the International Monetary Fund. On December 4, 1997, a recorded loan package led by the International Monetary Fund assigned to South Korea, which bailout program details will provide in Chapter 3. On December 15, the International Monetary Fund board meeting in Washington, D.C. considered a speed delivery of a portion of the 60 billion US dollar bailout program, which 2 billion US dollar will available to South Korea on December 30 and another 2 billion US dollar available on January 8, 1998. After the major US and European banks announced that they would allow South Korean customers more time to pay off their debts and Korea government proposed to issue 25 billion US dollar in bonds Won. On January 29, Korea government and global creditors agreed to exchange their debts with government guaranteed loans in a deal expected ending the Korea's liquidity crisis.

Up to this point, the Asian Financial Crisis started from Thailand and then spread to the Philippines, Malaysia, Indonesia, and finally to South Korea. Within this Crisis, the above countries' currencies depreciated heavily. In addition, the International Monetary Fund granted three bailout programs to Thailand, Indonesia, and South Korea. At that moment, the whole Asian economic was in a severe condition.

(3) Period of re-evaluation of the bailout programs (February 1998 to December 1998)

As the International Monetary Fund bailout programs already assigned to different countries, Thailand, Indonesia, and South Korea requested to change some of the terms and regulations that written on the agreement. This led to the new negotiations and clarifications on the agreements. In addition, these terms and regulations generated the political unclear and future economic instability during the Crisis, which increased the amount of uncertainty.

IMF and Thailand

As mentioned in the above section, Thailand requested the International Monetary Fund to ease the terms in the bailout package on January 6. On February 12, the International Monetary Fund relaxed a key condition of bailout program to have budget deficit of 1 to 2 percent of GDP instead of a surplus in 1 percent. In addition, it allowed in easing the high domestic interest rates. After this one, it had four more modifications on the program on February 24, May 26, August 25, and December 1 respectively. The details of these modifications will provide in Chapter 3.

IMF and Indonesia

On February, Indonesia tried to impose a rigid currency regime that the International Monetary Fund, the United States, Germany, and Australia were all in opposition to such currency board that planned to create fixed exchange rate system for the Rupiah. The International Monetary Fund also threatened to withhold the further

money under a 43 billion US dollar bailout package. Finally, on February 21 - 22, the plan in having currency board was suspended due to intense pressure from other nations. On March 2, the Indonesia said that the original bailout program was not work and required an IMF- Plus plan. Because of the conflict between the International Monetary Fund and Indonesia, the International Monetary Fund would delay the disbursement of funds to Indonesia. On April 8, the International Monetary Fund and Indonesia had reached an agreement on a new package of economic reforms and targets. Through the April and May, the political situations in Indonesia were in a great trouble with riots and President Suharto forced to resign from office of over 30 years as a president. On May 25, the International Monetary Fund delayed the disbursement of the next installment of a 10 billion US dollar balance-of-payment loan, the reform package, and pending the reassessment of the political and economic situation. Following on June 24, July 29, September 11, October 19, and November 13 had different modifications on the program respectively. The details of these modifications will provide in Chapter 3.

IMF and South Korea

Within this period, there had four modifications associated with the initial program. The dates were February 7, May 2, July 24, and November 13 respectively. All the details of these modifications will provide in Chapter 3.

Summary

Overall, the bailout programs were granted during the period of the Crisis to the Asian countries. When the granted country governments tried to renegotiate with the terms in the bailout package, this created economic and politic uncertainty. A more detail Asian Financial Crisis chronology was presented in **Appendix**. As we observed, nearly all of the important events during the Crisis were related to the International Monetary Fund. From the above, we already had the background on what happened among different Asian countries during the Crisis. All of these events stimulate the question in the causes of the Asian Financial Crisis. In the following section, I will conduct a survey of the causes of the Asian Financial Crisis.

Section B

Survey of Causes of the Asian Financial Crisis

The above section already discussed the chronology of the Asian Financial Crisis from 1997 to the end of 1998. Throughout this period, it had many critical events that deepened the wound of the Crisis. To understand the causes of the Asian Financial Crisis, we should use different aspects to analyze this issue. In this section, I conduct a survey of different economists' opinions about the causes of the Crisis. Through my survey, I conclude that seven major causes contributed to formation of the Crisis.

Seven major causes of the Asian Financial Crisis

Historically, the onset of the Asian Financial Crisis was on July 2, 1997 when Thailand let their currency into floating rate or gave up the peg currency policy. Before this time, as discussed in Chapter 1, the Asia economic was in a fast and strong economic growth. Why the Asian Financial Crisis occurred? There have seven major arguments on the causes of the Crisis that will discuss in the following.

Cause I: The slowdown in output growth

In different Asian countries, they experienced extraordinary growth within several decades. One of the major driven forces for the growth was the continuing increase input for productivity, such as the labor force growth and capital inflow from other countries, instead of improving output efficiency. In the World Bank Policy Research Bulletin (1993), it mentioned that the investment and rapidly growing human capital were the principal engines of growth.

According to the law of diminishing returns, on the other hand, when the input increases indefinitely with the same quantity or without improving efficiency, the output will increase sharply at the growth phase. When the output reaches a certain amount, it will increase at a decreasing rate at the end phase. When we apply this theory to different Asian countries, the past several decades is the growth phase that the output are increasing sharply, as shown in **Exhibit 1.3**, while input variables of Asian countries also increasing sharply. When the Asian countries reached the end phase, they obey the law of diminishing returns. Therefore, the Asian countries cannot keep its economy growth at extraordinary rate. In The Myth of Asia's Miracle by Krugman (1994):

> "The newly industrializing countries of Asia, like the Soviet Union of the 1950s, have achieved rapid growth in large part through an astonishing mobilization of resources. Once one accounts for the role of rapidly growing inputs in these economics' growth, one finds little left to explain, Asian growth, like that of the Soviet Union in its high-growth era, seems to be driven by extraordinary growth in inputs like labor and capital rather than by gains in efficiency." (p.6)

Within the same article, it also concluded other opinion as follow:

> "The basic conclusion is the same: there is startlingly little evidence of improvement in efficiency. Kim and Lau conclude of the four Asian "tigers" that the hypothesis that there has been no technical progress during the postwar period cannot be rejected for the four East Asian Newly Industrialized countries." (p.7)

During the year of 1995 and 1996, the growth rate of GDP was increasing at a decreasing rate, which shows in **Exhibit 1.3**. In China, NIE, and ASEAN-4, the growth rate of GDP was increasing at a decreasing rate, which implied that the Asian countries were in the end period of diminishing returns. If further investing within this period without increasing in efficiency, the average rate of return of investments will be low or the marginal cost and average cost will increase. In addition, the ratio of foreign debt/ GDP will also increase when the GDP decreases, this will lead to other macroeconomics problems such as currency depreciation, stock markets crash, non-performance loans, and even further a financial crisis, the statement below already indicated that the risk of outbreak of the Crisis in Asian countries.

> "... high economic growth may make an economy more vulnerable to **a** crisis. For instance, high growth rate may induce overly optimistic beliefs that the economic expansion will persist unabated in the future. ... In such circumstances, as external shock that leads to a sudden change in expectations can cause a rapid reversal of capital flows and trigger a currency crisis." (Corsetti, Pesenti, and Roubini, What Caused the Asian Currency and Financial Crisis?, p.12)

Cause II: The long-term current account imbalance

As I mentioned in Chapter 1, most of the Asian countries in my observation, except Japan, Taiwan, and Indonesia, had trade deficit throughout the sample year from 1987 - 1996. When we included the trade balance into the current account, the results of

the observed countries had large amount of the current account imbalance in the sample year.

The different Asian countries' current accounts position presented in the **Table 2.1**, note that the data for Hong Kong is not available. In **Table 2.1**, it indicated only Japan and Taiwan with a consistence current account surplus with a range of 1 percent to 3 percent and 2 percent to 6 percent respectively. Singapore was also with large amount of current account surplus, on average over 10 percent per year, except 1987 with 0.5 percent deficit. The current account of China fluctuated throughout the sample period, but within the range from negative 2 percent to positive 3 percent. In South Korea and Malaysia, the year 1987, 1988, and 1989, the current account surplus was decreasing toward deficit, from 7 percent in 1987 decrease to 2 percent in 1989 in South Korea and from 8 percent in 1987 to 0.8 percent in 1989 in Malaysia. Since 1990, the current account started in deficit and finally grew into 4.75 percent of GDP in Korea in 1996. In Malaysia the current account deficit was as high as 8.6 percent in 1991 and decreased to 4 percent in the following years, increased again in 1995 with 8.5 percent in 1995, and finally ended with 4.9 percent in 1996. Indonesia, the Philippines, and Thailand, all of them had a consistent current account deficit throughout the sample period. In Indonesia, on average, the current account deficit was around 1 percent to 3 percent of GDP. In the Philippines, it started with around 1 percent of GDP deficit, then the deficit increased to 6 percent in 1990 and decreased to around 2 percent in 1991 and 1992. The deficit increased again to over 5 percent in 1993 and 4 percent in 1994, finally ended with 4.7 percent in 1996. In Thailand, the first three years the current account deficit was within

the range of 0 to 3 percent of GDP. Since 1990, on average, the current account deficit was around 7 percent yearly and ended with 8.1 percent in 1996.

Table 2.1
Current Account as Percent of GDP, 1987 -1996

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Japan	2.98	2.67	2.27	1.38	1.86	2.98	3.10	2.71	2.36	1.53
China	0.09	-0.96	-0.99	3.09	3.27	1.33	-1.94	1.26	0.23	0.87
Singapore	-0.53	7.55	9.74	8.33	11.29	11.38	7.57	16.12	16.81	15.65
Korea	7.11	7.45	2.44	-0.69	-2.83	-1.28	0.30	-1.02	-1.86	-4.75
Taiwan	NA	NA	NA	6.82	6.94	4.03	3.16	2.70	2.10	4.05
Indonesia	-2.69	-1.62	-1.11	-2.82	-3.65	-2.17	-1.33	-1.58	-3.18	-3.37
Malaysia	8.06	5.58	0.83	-2.03	-8.69	-3.74	-4.66	-6.24	-8.43	-4.89
Philippines	-1.35	-1.04	-3.53	-6.08	-2.28	-1.89	-5.55	-4.60	-2.67	-4.77
Thailand	-0.71	-2.68	-3.46	-8.50	-7.71	-5.66	-5.08	-5.60	-8.06	-8.10

NA: Not available
Source: International Financial Statistics Yearbook, 1999.
In exception, Taiwan, from Asian Development Bank.

From the above, we observed that most of the Asian countries had current account deficit. When the countries with strong growth rate in GDP, they did not have obvious problems because of the growth rate compensate the effect of current account imbalance. However, when the growth rate decreased as stated in Cause I, the problems became more obviously for the Asian countries and developed into the Asian Financial Crisis in 1997. In fact, the Asian countries with higher current account deficit associated with higher depreciation of its currency during the Crisis. For example, the currency of Indonesia, the Philippines, Thailand, Malaysia, and Korea devalued 151 percent, 52 percent, 78 percent, 52 percent, and 105 percent respectively. Countries with smaller current account deficit or surplus did not suffer comparable depreciation, like Taiwan and Singapore with depreciation about 15 percent gradually throughout the year.

> "In sum, while the correlation between currency depreciation and external imbalances by group of countries in the 1990s need not imply causation,

prima facie suggests that current account problems may have played a role in the dynamics of the Asian meltdown." (Corsetti, Pesenti, and Roubini, What Caused the Asian Currency and Financial Crisis?, p.8)

According to the opinions of Burnside, Eichenbaum, and Rebelo (1998), it stated that the ongoing fiscal deficit could explain the cause of the Crisis,

"The most natural alternatives explanation of the Southeast Asian currency crisis is that it reflected profligate fiscal policy: ongoing fiscal deficit led to sustained reserve losses and to the eventual abandonment of fixed exchange rates." (Burnside, Eichenbaum, and Rebelo, Prospective Deficits and the Asian Currency Crisis, p.2)

Cause III: The Asian country currencies overvalued

During the Crisis, the speculators had heavily attacked the Asian countries' currencies. Finally, the Central Bank forced to let their currencies to float freely during summer of 1997 because of foreign reserves exhausted. These events marked an abandon of the previous foreign exchange policy of tightly managing, or pegging, currencies against either US dollar or a basket of currencies, which each country currency system already mentioned in Chapter 1. Therefore, the value of currency exchange rate likely determined by the market forces such as the macroeconomic factors after the abandonment. The fact is that the currency of Indonesia, the Philippines, Thailand, Malaysia, and South Korea depreciated heavily. Taiwan and Singapore depreciated slightly. Nearly all of the currencies in Asian region depreciated during Crisis, except Hong Kong dollar that it defended their pegging to US dollar successfully. Because of

their fixed exchange rate policy before the Crisis, most of the Asian currencies were overvalued.

> "... the Thai baht, Indonesia rupiah and Malaysia ringgit most prominently -- were overvalued on the eve of the crisis.", in addition, "As of May 1997, the baht, the ringgit and pseo were overvalued according to this criterion. While the overvaluations are not large, they do appear to be persistent. ... Interestingly, both methods indicate that the Korean won was undervalued even before its recent discrete drop in value." (Chinn, Before the Fall: Were East Asian Currencies Overvalued?, p.1)

Giancarlo Corsetti, Paolo Pesenti, and Nouriel Roubini (1998) also argued the real exchange rate appreciation during 1990s.

> "Taking 1990 as the base year, we observed that by the spring of 1997 the real exchange rate had appreciated by 19% in Malaysia, 23% in the Philippines, 12% in Thailand, 8% in Indonesia, 18% in Singapore, and 30% in Hong Kong. In Korea and Taiwan, the currency depreciated in real terms (respectively by 14% and 10%). This suggests that with the important exception of Korea, all the currencies that crashed in 1997 had experienced a real appreciation." (Corsetti, Pesenti, and Roubini, What Caused the Asian Currency and Financial Crisis?, p.20)

Both of the papers suggested that the Asian currencies were overvalued before the Crisis, except Korea won. Theoretically, when a country currency appreciates, its export will decrease and import will increase that the balance of payment will shift to negative. Then the exchange rate will adjust according to the theory of interest rate parity. Since

most of the countries in Asia having tightly managing or pegging to other currencies in order to reduce currency risk for foreign investors, this adheres the market mechanism to self-adjust the exchange rate. The managing or pegging method of currency only postpones the current depreciation of the currency to the future. This real appreciation of currency helped to build the large amount of current account imbalances. In the same side, this also reflects the decrease competitiveness in Asian countries with respect to China of its increasing competitive position.

> "The resulting strong real appreciation helped build the region's large and growing current account imbalances." (Corsetti, Pesenti, and Roubini, What Caused the Asian Currency and Financial Crisis?, p.21)

Since 1995, the US dollar was becoming strong in respect to Japanese Yen was weak, so most of the Asian countries' export was decreasing because the goods were relative more expensive than Japan. These exert extra pressure to different Asian currencies to devalue in order to increase its competitiveness within the region.

Cause IV: The banking system problems

In the Crisis, the banking system also played an important role. In Hamann (1999) states that "the Asian crisis differed from previous financial crises that created a need for the IMF's assistance. It was rooted primarily in financial system vulnerabilities and other structural weakness" (p.9). Since most of the financial markets in Asian region were relatively underdeveloped, so most of the capital inflows and outflows occurred on local banks. Within the sample period (1987 - 1996), we used the data of deposit money bank because this is the one available throughout whole period. In **Table 2.2** and **Table**

2.3 presented the deposit money bank lending to private sector as percentage growth and as percentage of GDP respectively. In Japan, the lending rate was decreasing from 11 percent in 1987 to 1 percent in 1996, because of the weak economic situations in Japan during 1990's. In China, the growth rate, in exception of 1993 with 43 percent, increased from 19 percent in 1987 to 24 percent in 1996 gradually. Moreover, it fluctuated between 10 percent and 20 percent and with 15 percent in 1996.

During the last decade, we observed that most of the deposit money banks in Asian region were over-lending to different local sectors in order to finance different projects. Among different Asia countries, most of them have the norm of over-lending to private sectors from the banks.

Besides the large quantity of loans, the quality of loans made by banks and non-banks were low, either with uncertain profitability return or with speculative purchase of existing financial assets. In most of the countries, Thailand, Korea, Indonesia, and Malaysia that were highly exposed to the Crisis, the banking industry was over investment in high risk and poor profitability industry. The evidence showed that the domestic banks borrowed from foreign banks then lent to the domestic firms. When the domestic firms associated with financial difficulties, the domestic banks faced domestic non-performing loans and foreign liabilities.

In Ito's opinion, it stated,

> "Second, a weak bank and nonblank sector complicated the currency crisis... A weak banking system becomes an indicator of for foreign speculators to attack the currency." (Ito, Capital Flows in Asia, p. 17)

In addition,

"There is indeed overwhelming evidence that the Asian banking and financial systems were very fragile – poorly supervised, poorly regulated, and in a shaky condition even before the onset of the crisis." (Corsetti, Pesenti, and Roubini, What Caused the Asian Currency and Financial Crisis?, p.28)

Table 2.2
Deposit Money Bank Lending to Private Sector, 1987 - 1996
(% growth)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Japan	11.17	10.94	11.63	9.21	5.29	2.33	-1.12	0.20	1.68	1.17
China	19.59	17.81	18.13	22.90	19.76	20.84	43.52	24.58	24.23	24.68
Hong Kong	NA	NA	NA	NA	NA	10.17	20.15	19.93	10.99	15.75
Singapore	6.41	11.16	19.53	14.44	12.41	9.77	15.15	15.25	20.26	15.82
Korea	13.93	12.58	26.03	26.82	20.78	12.55	12.94	20.08	15.45	20.01
Taiwan	NA	NA	NA	NA	21.25	28.70	19.46	16.18	10.00	6.00
Indonesia	29.00	38.44	50.49	66.33	17.82	12.29	25.48	22.97	22.57	22.68
Malaysia	0.06	8.68	22.34	21.16	20.58	10.79	10.80	16.04	30.65	25.77
Philippines	20.60	18.12	24.07	29.20	7.30	24.66	40.74	26.52	45.40	48.72
Thailand	22.59	29.49	31.32	34.76	20.45	20.52	24.03	30.26	23.76	14.63

NA: Not available
Source: International Financial Statistics Yearbook, 1999.
In exception, Taiwan, from Asian Development Bank.

Table 2.3
Deposit Money Bank lending to Private Sector, 1987 - 1996
(% of GDP)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Japan	110.85	115.02	120.04	121.94	120.47	119.94	117.52	116.81	117.79	115.21
China	78.70	74.30	78.38	86.58	89.27	88.75	95.49	87.12	85.83	91.65
Hong Kong	NA	NA	NA	NA	141.84	134.20	140.02	149.00	155.24	162.36
Singapore	84.22	78.98	82.16	82.20	83.34	85.06	84.14	84.21	90.75	95.96
Korea	46.75	44.33	49.87	52.54	52.81	53.34	54.21	56.84	57.04	61.81
Taiwan	NA	NA	NA	100.41	108.99	126.43	137.23	145.89	149.49	146.05
Indonesia	21.79	25.98	32.52	46.07	45.79	45.51	48.90	51.88	53.48	55.99
Malaysia	64.44	61.37	66.59	71.44	75.29	74.72	74.06	74.61	84.80	93.39
Philippines	15.98	16.12	17.28	19.18	17.76	20.44	26.37	29.06	37.52	48.43
Thailand	47.30	51.04	56.30	64.52	67.70	72.24	80.01	91.00	97.62	101.94

NA: Not available
Source: International Financial Statistics Yearbook, 1999.
In exception, Taiwan, from Asian Development Bank.

Cause V: Roles of foreign portfolio investors

One of the success factors for Asian region is the massive capital inflow, either increase input for production as mentioned above. However, this is also one of the causes for the Crisis. During the 1990s, the capital inflow in Asian region, most of them were short-term loans, increased from an average of 1.4 percent of GDP between 1986 and 1990 to 6.7 percent between 1990 and 1996. The reasons of this large capital inflow were that the capital market liberalization in the industrialized countries facilitated a greater flow of funds to emerging markets around the globe. In addition, low rate of return in the United States and Japan favored outward investment to these Asian countries, which have the factors of continuing economic growth, wide-ranging financial deregulation in the local banks and domestic corporations, without sufficient supervision, with low currency risk because of pegging exchange rate, and Asian country governments encouraged foreign investments with special incentives. In the period of Crisis, the net private inflows of Indonesia, Malaysia, the Philippines, Thailand, and South Korea in total with a net inflows dropped from $93 billion to -$12.1 billion, with an opposition position of $105 billion outflow of capital or 11 percent of GDP growth within a short period of time. This was hardly for a country to adjust their system within that short period with that large amount of capital outflows. Consequences, the nominal and real exchange rate depreciated, interest rate increased sharply and rapid rose in non-performing loans in banking sectors. All of these contributed to the bad economic conditions for different Asian countries. As Ito said,

> "Third, short-term liabilities were mounting in some of Asian countries, most notably in Thailand, Indonesia, and Korea. These short-term capital

can withdrawn quickly and put pressure on the exchange rate." (Ito, Capital Flows in Asia, p. 18)

Cause VI: The political instability and financial policy uncertainty

During the 1997 and 1998, the political and financial policies were instable and uncertain in different Asia countries. In Thailand, the government broke its promise to buy in bad property debts, failed to save Finance One, cabinet reshuffled and eventually government collapsed. In Malaysia, the Prime Minister Mahathir announced against "rogue speculators" and international "morons". In Indonesia, the elections, the bad news about the health of the Indonesian president Suharto, his policy reversal for the International Monetary Fund bailout programs, and finally resigned from the president office. In South Korea, the presidential campaign and the elected president Kim Dae Jung with contradictory signals, the threat of labor unrest in the region and the bankrupt of chaebols. Throughout the Crisis, market reacted to the political and policy uncertainty in the region. In addition, different governments did not seriously implement the International Monetary Fund supported programs at the beginning. All of these uncertainties make the economic conditions worse and more serious and also frightened the domestic and foreign investors.

"A deterioration in expectations about the political and financial environment can contribute to a balance of payments and exchange rate crisis, especially when economic fundamentals are not very comforting. Such shifts in expectations can occur quickly and without warning."

(Corsetti, Pesenti, and Roubini, What Caused the Asian Currency and Financial Crisis?, p23)

Cause VII: The contagion effect of the Crisis

The starting point of the Asian Financial Crisis began in Thailand on July 2, 1997. At first, it was a local crisis. Finally, it affected nearly all of the Asian countries. Why the local crisis will become a worldwide crisis? The reason is the contagion effect on the investors. When the Thai crisis started, it scared the investors to pull out their money from the Thai markets. In addition, because most of the Asian countries had the similar economic structures as Thai did. Therefore, they unquestionable pull out their money from the neighbor countries, which the economic situation in these countries did not have problems. Finally, this formed the crisis to be contagious. The good example to show the crisis is in the form of contagion through South Korea. In South Korea, before the Crisis, it was the 11^{th} largest economy and became as a new member of OECD. Because of the contagion effect, the lenders of the South Korea refused to roll over the interest rate that caused the Crisis spread from the Southeast Asia to South Korea. In fact, the proximity of South Korea and other countries are far away. Therefore, the spread was because of the misconception of the lenders. This caused of the bank run of a country and finally developed into the Asian Financial Crisis.

In Park and Song (1999),

"This lead to the conclusion that financial panic and herd behavior were important causes of spreading the Thai crisis to NIE 4. The financial

markets of NIE 4 suffered initially the fallout of the crisis in ASEAN-4."

(Park, and Song, Financial Contagion in the East Asian Crisis, p.20)

Summary

In summary, it already discussed about the seven major causes that enhance the local Thai crisis into the Asian Financial Crisis. Most of them related to each other. Among these seven causes, the fundamental causes will be the Cause II and Cause IV. This also provides the reason for the length of the Crisis is lasting so long. This is because most of the causes are already existed for a long time. They accumulated high pressure to the occurrence of the Crisis. During the Crisis, the International Monetary Fund granted Thailand, Indonesia, and South Korea of bailout programs, which mentioned the announcement date in Section A. What are the bailout programs about? Do these programs help the countries to stabilize their economy? Chapter 3 will provide the answer.

Chapter 3

Critical Analysis of IMF Programs

In the above chapter, it already discussed about the causes of the Asian Financial Crisis and the role of International Monetary Fund during the Crisis. During the Crisis, the International Monetary Fund had three bailout programs implemented in Thailand, South Korea, and Indonesia with the amount of 17.2 billion US dollar, 58.4 billion US dollar, and 42.3 billion US dollar respectively. The total amount for all three programs was 117.9 billion US dollar provided by International Monetary Fund, World Bank, Asian Development Bank (ADB), and Bilateral. The commitment of different communities to the bailout programs illustrated in **Table 3.1**.

Table 3.1
Commitments of Different Communities

	IMF	World Bank, ADB	Bilateral	Total
Thailand	4.0	2.7	10.5	17.2
South Korea	21.1	14.2	23.1	58.4
Indonesia	11.2	10.0	21.1	42.3
Total	36.3	26.9	54.7	117.9

All in billion US dollars
Source: International Monetary Fund

According to the announcements of the International Monetary Fund throughout the whole period of Crisis, the programs had three stages of goals want to accomplish, which were:

Immediate goal:

- Restoring confidence and creditworthiness in the region;
- Prevent the foreign debts default;
- Temporary tightening of monetary policy to limit exchange rate depreciation;

- Control the inflation rate;
- Strengthen and structural reform of financial systems, especially banking sector;
- Remove monopolies, trade barriers, and nontransparent corporate practices;
- Rebuild foreign exchange reserves;
- Maintain a balance fiscal policy;
- Limit the decline of output and increase the efficiency;

Intermediate goal:

- Shortening and easing the adjustment period in the program countries through reducing of the social costs of adjustment and easing of the effect of credit tightness and reductions in trade financing;

Long-term goal:

- To enable the affected Asian countries to emerge more strongly in development
- Strengthen the international monetary system to meet the next century challenges.

In order to achieve these goals, the International Monetary Fund initial bailout programs include different features that the countries required to strictly follow.

In the following sections, I will mention the details of different bailout programs, associate with several modifications after the first implementation in Thailand, South Korea, as well as Indonesia. All the details in different bailout programs developed from different sources included Wall Street Journal (1997 - 98, selected issues), the official announcements from the International Monetary Fund, the recipient countries and other related economic research papers. In addition, I will concentrate the critical analysis on the initial program implement on each country in order to have conclusion on the feasibility of these initial programs.

Section A

Thailand Program

The Asian Financial Crisis began in Thailand on July 2, 1997 under a series of speculative attacks and the market losing confidence in the economy. On August 20, 1997, the International Monetary Fund approved a stand-by credit for Thailand of up to SDR 2.9 billion of about 4 billion US dollar. This stand-by credit equivalent to 505 percent of Thailand's quota will distribute over the next 34-month period. In addition, the total amount in the bailouts program was 17.2 billion US dollar with a series of economic reform items associated with it. The information that I used to form my detail information for the Thailand program is based on the Letter of Intent of the government of Thailand, and Wall Street Journal (Aug, 1997 issues).

Exhibit 3.1 summarized the detail of the initial program of economic reform proposed by the International Monetary Fund for the Thailand government to follow. The initial program included the details on the financial sector restructuring, fiscal policy, new framework for monetary policy, and structural reform in order to increase the efficiency and transparency of the economy.

However, the initial program did not have the expected outcome on the Thailand. The Thai Baht was depreciation, sharpen than the expectation in the slowdown of economy and severe adverse regional economic developments. Therefore, the initial program followed with five modifications from November 1997 to December 1998. All the details of the five modifications presented in **Exhibit 3.2**.

The first modification announced through the Letter of Intent on November 25, 1997 in order to have adjustment according the current unfavorable outcome after the program implemented.

On February 24, 1998, the Second modification on the program was proposed. It decided to prioritize the stabilizing the exchange rate, limit the degree of negative social impact on the economic, and set the stage to return to international financial markets.

The Third modification proposed on May 26, 1998, the main purpose was to minimize further decline of the economy and have early recovery with stabilize exchange rate and fostering confidence.

The Fourth modification made on August 25, 1998. Having an updated macroeconomic framework with the economic development through the first half of 1998, incorporated a more comprehensive approach to bank and corporate restructuring.

The Final modification implemented on December 1, 1998 in order to further facilitate a recovery of the real economy by providing a larger fiscal stimulus to domestic demand, supportive monetary stance, and further corporate debt restructuring.

Exhibit 3.1

The IMF initial Thailand bailout program

Announcement Date:	August 11, 1997
Initial Date:	August 20, 1997
Stand-by-Credit:	US$4 billion or 505 percent of its quota
Total Amount:	US$17.2 billion
Last:	over 34-month period
No of Modifications:	5
Modified Date:	1997 -- November 25 1998 -- February 24, May 26, August 25, December 1

Objectives: To achieve an orderly adjustment of the domestic economy to the sharp reduction in the current account deficit to about 5% of GDP in 1997 and 3% in 1998; maintaining gross official reserves at the equivalent of 4.2 months of imports in 1997 and 4.4 in 1998; limit inflation rate to 9.5% in 1997 and 5% in 1998; a credible and up-front restructuring financial sector

Initial program of economic reform:

- Monetary policy and exchange rate policy
  - a new framework in strict control over the monetary aggregates with ending the unconditional support to the insolvent institutions, with the new managed float for the Baht
  - the monetary program make an expansion of 7% in broad money during 1997, and reserve money growth of 8% in order to reduce money demand in the near term
  - give a rise in interest rates to guard against the unexpected shift in capital flows

- Fiscal policy
  - fiscal measures equivalent to about 3 percent of GDP to correct the public sector deficit to a surplus of 1 percent of GDP in 1997/98 from a deficit in 1.6% of GDP in 1996/97
  - support the necessary improvement in the current account position
  - provide costs of financial restructuring, including an increase in the VAT tax rate from 7% to 10%
  - to limit the negative effects of the expenditure cuts on economic growth and income distribution
  - introduce additional expenditure and revenue measures with increaesing selective tax rates and broadening the tax base

- Financial sector restructuring
  - identification and closure of unviable financial institutions (including 56 finance companies out of 91)
  - intervention in the weakest banks
  - recapitalization of the financial institutions to the legally required level or being take over
  - try to restore public confidence in the financial system as quick as possible through the fund
  - undercapitalized institutions that cannot raise their capital to the legally required level will be taken over by the FIDF

- Other structural measures
  - structural initiatives to increase efficiency, deepen the role of the private sector and reinforce its outward orientation include civil services reform, privatization, and attract foreign capital
  - capital control on Baht borrowing by nonresidents, with the proper time to restore the foreign exchange market

Sources: Letter of Intent of the government of Thailand, Wall Street Journal

Exhibit 3.2

The modifications of the Thailand bailout program

First Modification of the program (Nov 25, 1997):

- Additional measures to maintain the public sector surplus at 1% of GDP
- Establishment a specific timetable for implementing financial sector restructuring in strategies of recapitalization and strengthening of the financial system
- Acceleration of plans to protect the weaker sectors of society

Second Modification of the program (Feb 24, 1998):

- Accelerating financial system restructuring, emphasis on the privatization of the intervened banks
- Adjusting fiscal policy targets from public sector surplus of about 1% GDP to a deficit of 2% of GDP
- Ensuring an adequate availability of credit to the economy to foster economic recovery
- Tight monetary policy in order to have exchange rate stability
- Deepening the role of private sector in order to attract foreign capital
- Strengthening the social safety net

Third Modification of the program (May 26, 1998):

- Further reductions in interest rates, higher monetary growth rates with the recovering money demand
- Adjusting the fiscal target by increasing the public sector deficit target to 3% of GDP
- Additional 0.5% of budget GDP to strengthen the social safety net
- Accelerating corporate debt restructuring by strengthening legal and institutional framework - include reform of the bankruptcy act, foreclosure procedures, and foreign investment restrictions
- Continuing focus on the financial sector reform, especially in the banking system
- Strengthen the finance company sector
- Resolving the status of the 4 intervened banks to minimize the need for future public support

Fourth Modification of the program (Aug 25, 1998):

- Maintain 3% of GDP target for the public sector deficit in 1997/98, and target 3% deficit in 1998/99
- Accelerate bank and corporate restructuring through new initiatives include plans to resolve the status of intervened banks and weak finance companies and provision of public funds for recapitalizing while linking to progress in corporate debt
- Tax law change and establishment of a Corporate Restructuring Advisory Committee
- Strengthen the social safety net
- Further opening economy to foreign investment through privatization and conversion of the Alien Business Law into a more liberal foreign investment law

Final Modification of the program (Dec 1, 1998):

- Raise the target public sector deficit from 3% to 5% of GDP in 1998/99
- Steadfast implementation of the August 14 package on financial sector restructuring and related structural and legal form
- Voluntary, market-based strategy for corporate debt restructuring by developing an effective monitoring system, credit bureaus, and reviewing options for future adjustments.

Sources: Letter of Intent of the government of Thailand, Wall Street Journal

Section B

Indonesia Program

After the crash of financial market in Thailand, the effect exposed the financial and economy structural weakness in Indonesia's economy, which included the large amount of short-term foreign debt owned by the private corporate sector. On November 5, 1997, the International Monetary Fund approved a stand-by credit for Indonesia of up to SDR 7.3 billion of about 10 billion US dollar. This stand-by credit, which is equivalent to 490 percent of Indonesia's quota, will distribute over the next 36-month period. In addition, the total amount in the bailouts program was 42.3 billion US dollar with a series of economic reform items associated with it.

Exhibit 3.3 summarized the detail of the initial program of economic reform proposed by the International Monetary Fund for the Indonesia government to follow. The initial program included the details on the financial sector restructuring, structural reforms to enhance economic efficiency and transparency, stabilizing the Rupiah through monetary and exchange rate policy, and fiscal policy.

After the announcement of the International Monetary Fund bailout program, the Indonesian economy continuing loss of confident and with sharp declining in value of the Rupiah. The Indonesian authorities announced reinforcement and acceleration of the program in the Memorandum of Economic and Financial Policies on January 15, 1998, details listed in **Exhibit 3.4**.

On April 10, 1998, the Indonesian government issued a Supplementary Memorandum of Economic and Financial Policies due to the previous policy uncertain, the Rupiah failed to stabilize, inflation increased sharply, and economic condition

deteriorated. This modification included the macroeconomic policies to the deteriorated economic situation and enhanced the structural and banking reforms.

The economic situation was worsened, the social disturbances and the political shift in May. The program prioritized to strengthen the social safety net, restructure the banking system, and repair the weakened distribution system. This modification made on June 24, 1998. On July 29, 1998, the government requested the cancellation of the current stand-by arrangement and replaced with a new extended arrangement. In addition, government strengthened the strategy for bank and corporate restructuring and improved the distribution system. All the details listed in **Exhibit 3.4.**

There had three more modifications in Indonesia announced on September 11, 1998, October 19, 1998, and November 13, 1998 respectively. These three modifications updated the programs in the current economic situations. The details of these three modifications were not listed in Exhibit 3 because of lack of information.

Exhibit 3.3

The IMF initial Indonesia bailout program

Announcement date:	October 31, 1997
Initial Date:	November 5, 1997
Stand-by-Credit:	US$10 billion or 490 percent of its quota
Total Amount:	US$42.3 billion
Last:	over 36-month period
No of Modifications:	7
Modified Date:	1998 -- January 15, April 10, June 24, July 29, (details available) September 11, October 19, November 13 (details not available)

Objectives: To stabilize the rupiah while maintaining gross foreign exchange reserves at a comfortable level; limiting the economic downturn during the remainder of this year and next year; control the inflation rate no more than 10% in 1998/99 and lower it to 5%; reduce the current account deficit to below 3% of GDP with steady decline in the external debt

Initial program of economic reform:

- Monetary policy and exchange rate policy
  - the retention of a tight monetary policy to maintain stability in the fiancial market
  - foreign exchange intervention to restore confidence and proveide a clear direction to the market
  - flexible exchange rate and aimed to keep the inflation rate below 10%
  - Bank of Indonesia will limit the base money ceiling as a prelude to phase out the program

- Fiscal policy
  - fiscal measures about 1% of GDP in 1997/98 and 2% in 1998/99
  - yield a public sector surplus of 1% of GDP in both periods
  - facilitate external adjustment and provide resources to pay for financial restructuring through the reform of tax policy and tax base
  - fiscal measures include cutting low priority expenditures (reschedule or postpone the infrastructure projects), removing government subsidies, eliminating VAT exemptions, adjusting administered prices
  - government intend to move to a comprehensive and transparent system to report on the public sector fiscal sector

- Financial sector restructuring
  - close unviable institutions
  - merging state bank or require them to formulate and implement rehabilitation plans within 60 days
  - establishing a timetable for dealing with remaining weak institutions
  - improving the institutional, legal, and regulatory framework for the financial system
  - government will not guarantee repayment of the liabilities of these banks except for small depositors with amout up to Rp 20 million per depositor per bank.
  - Bank of Indonesia will closely surprvise the implementation of the rehabilitaion plans
  - introduce private sector ownership of at least 20% in at least one state bank within one year
  - the regional banks with major losses will place under conservatorship and the FX license suspend

- Structural reforms enhance economic efficiency and transparency by
  - liberalization of foreign trade and investment
  - dismantling of domestic monopolies
  - expanding the privatization program
  - implement and expand the social safey net program
  - regular publicate the fianncial data and strengthen the monitoring procedure

Sources: Letter of Intent of the government of Indonesia, Wall Street Journal

Exhibit 3.4

The modifications of the Indonesia bailout program

Memorandum of Economic and Financial Policies (Jan 15, 1998):

- Adjust 1998/99 budget that the public sector deficit of about 1% of GDP to accommodate part of the economic slowdown
- Cancel 12 infrastructure projects, revoke the privileges of IPTN's airplane and the National Car project
- Further bank and corporate sector restructuring, establishment of the Indonesia Bank Restructuring Agency (IBRA) and government guarantee on bank deposits and credits
- Limit the monopoly of the national marketing board (BULOG) to rice, deregulating domestic trade in agricultural produce, and eliminating restrictive market arrangements
- To relieve the suffering caused by the drought by ensuring adequate food supplies available at reasonable price

Supplementary Memorandum of Economic and Financial Policies (April 10, 1998):

- Strong monetary policy to stabilize the Rupiah
- Accelerated bank restructuring with IBRA to continue of take-over/closure of weak institutions
- Issue bonds to finance the restoration of financial qualified institutions
- Eliminating of existing foreign ownership restrictions on banks and a new bankruptcy law
- Comprehensive agenda of structural reforms to enhance competition and efficiency of economy, further privatization of 6 major state enterprises and identify of 7 new enterprises for privatization in 1998/99
- Accelerated to develop a framework with foreign creditors to restore trade financing and to resolve the issue of the corporate debt and interbank credit
- Strengthening the social safety net through small and medium-sized company and public works
- Enhancing the program through daily monitoring by the Indonesia Executive Committee of the Resilience Council in cooperation with IMF, the World Bank, and the ADB

Second Supplementary Memorandum of Economic and Financial Policies (June 24, 1998):

- Increase social expenditure to 7.5% of GDP and limit the budget deficit to 8.5% of GDP
- Rehabilitating and strengthening the disrupted distribution system caused by social disturbances
- Restructuring the banking system through recapitalize, merge, or effectively close weak banks, with the commitment to guarantee all depositors and creditors
- Establish as effective bankruptcy system and Strengthening the monitoring of the economic program

Letter of Intent (July 29, 1998):

- In progress in restructuring the banking system by agreeing for sale of one of the six audited banks,
- Transfer seven banks asset to asset management unit, transfer six state banks from the Ministry of State Enterprises to the Ministry of Finance
- Officially launch the Indonesia Debt Restructuring Agency (INDRA), removing restrictions on debt-equity conversions and tax neutrality for mergers, and dealing with foreign direct investments
- Improving the distribution system and the social safety net to low income family

Sources: Letter of Intent of the government of Indonesia, Wall Street Journal

Section C

South Korea Program

After the crash of financial market in Thailand, the effect spread to the South Korea, which has advanced industrial economy. The financial and economy structural weakness in South Korea's economy was due to the government interference and the close relationship between banks and conglomerates. The Asian Financial Crisis led the investors of lack of market confidence brought the country close to depleting its foreign exchange reserves. On December 4, 1997, the International Monetary Fund approved a stand-by credit for Indonesia of up to SDR 15.5 billion of about 21 billion US dollar. This stand-by credit, which is equivalent to 1,939 percent of Indonesia's quota, will distribute over the next 36-month period. In addition, the total amount in the bailouts program is 58.4 billion US dollar with a series of economic reform items associated with it.

Exhibit 3.5 summarized the detail of the initial program of economic reform proposed by the International Monetary Fund for the South Korea government to follow. The initial program included the details on the monetary policy and exchange rate policy, fiscal policy, financial sector restructuring, efforts on enhancing economic efficiency and transparency, trade liberalization measures, capital account liberalization the regular publication and dissemination of key economic and financial data.

After implemented the initial bailout program in South Korea, the situation did not response as the expectation. The financial crisis in South Korea worsened and concerned about whether the international banks would roll over the short-term external debt. So, the revised version of the initial was announced on December 24, 1997. The

details of the entire revised version of bailout programs presented in **Exhibit 3.6.** In addition, the other revision details listed in **Exhibit 3.6**. This version aimed for the rollovers and extension claims by international creditors.

On January 7, 1998 and February 7, 1998, the program was further revised in the macroeconomic framework with a lower growth of 1 percent for 1998. In addition, the set up of the Tripartite Accord between labor, business, and government concern about the social issue.

On May 2, 1998, July 24, 1998 and November 13, 1998, all the revisions were response to adjust the program to fit into the current situations during the ending period of the Crisis.

Exhibit 3.5

The IMF initial bailout program of South Korea

Announcement Date:	Decemner 4. 1997
Initial Date:	December 4, 1997
Stand-by-Credit:	US$21 billion or 1,939 percent of its quota
Total Amount:	US$58.4 billion
Last:	over 36-month period
No of Modifications:	6
Modified Date:	1997 -- December 24 1998 -- January 7, February 7, May 2, July 24, November 13

Objectives: To narrow the external current account deficit to below 1% of GDP in 98 and 99; inflation at or below 5%; early return of confidence that limit the deceletarion in real GDP growth to about 3% in 1998

Initial program of economic reform:

- Monetary policy and exchange rate policy
  - tighten monetary policy immediately to restore and sustain calm in the markets and have impact on Won depreciation on inflation
  - interest rate raised from 12.5% on December 1 to 21% on December 5 and will raise further
  - money growth will limited to a rate of 5% or less which equivalent to inflation rate
  - flexible exchange rate policy will be maintained

- Fiscal policy
  - tight fiscal policy will keep in 1998 in order to reduce the burden on monetary policy and the costs of restructuring the financial sector
  - fiscal measures (include widening the bases of corporate, income, and VAT taxes) equal to about 2% of GDP to have room for financial sector restructuring in the budget

- Financial sector restructuring
  - introduce a clear and firm exit policy for financial institutions, strong market and supervisory discipline and independence for central bank by revised Bank of Korea Act
  - suspended the operations of 14 insolvent merchant banks
  - government capital injections to two large distressed commercial banks
  - all commercial banks with inadequate capital were required to submit plans for recapitalization
  - upgrade accounting, auditing, and disclosure standards, which corporate financial statements prepared in consolidated basis and certified by external auditors.
  - disposal of nonperforming loans will be accelerated

- Other structural measures
  - Trade liberalization measures
    - setting a timetable in line with WTO commitments to eliminate trade-related subsidies and the import diversification program in order to improve the import certification procedures
  - Capital account liberalization
    - to open up its money, bond, and equity markets to capital inflows and to foreign direct investment
  - Corporate governance and corporate structure
    - timetable will set by the time of review, no government support or tax privileges, reduce debt-equity ratio of corporations,and capital markets, and the system will reduce the risks involved
  - Labor market reform to facilitate the redeployment of labor
  - Information Provision provide regular publication and dissemination of key financial data

Sources:IMF Stand-by arrangmenet, Wall Street Journal

Exhibit 3.6

The modifications of the South Korea bailout program

First Modification of the program (Dec 24, 1997):

- Further money tightening and the abolition of the daily exchange rate band

- Speed up the liberalization of capital and money markets as lifting of all capital account restrictions on foreign investors' access to the Korean bond market by December 31, 1997

- Accelerating the implementation of the comprehensive restructuring plan for the financial sector and the trade liberalization under binding with WTO in financial agreed with the OECD

Second Modification of the program (Jan 1, 1998):

- Provide additional details on external financing and reserve management strategies outlined previous

Third Modification of the program (Feb 7, 1998):

- Targeting a fiscal deficit of 1% of GDP for 1998 to accommodate the impact of weaker economic and allow higher expenditure on the social safety net

- To implement a broader strategy of financial sector restructuring contained the immediate dangers of disruptions to the financial system

- Increase the range and amounts of financial instruments available to foreign investors

- To improve corporate transparency with strengthen the oversight functions of corporate boards of directors, accountability to shareholders and external audit committees

Fourth Modification of the program (May 2, 1998):

- Accommodation of a larger fiscal deficit of about 2% of GDP in 1998

- Strengthen and expand social safety net: widen the coverage of unemployment and minimum benefits

- Form an appraisal committee with international experts to evaluate the recapitalization plans

- Regulations to bring Korea's prudential regulations closer to international best practices

- Further liberalize the capital account in foreign exchange transactions, foreign ownership of assets

Fifth Modification of the program (July 24, 1998):

- Accommodation of a larger fiscal deficit of about 5% of GDP in 1998

- To bolster the social expenditure program through extense the coverage of unemployment benefits

- Framework for corporate restructuring negotiated with the World Bank to facilitate debt workouts and minimize to use the "rescue" loans

- Further financial sector restructuring with the implementation plans of the remaining 7 banks

- Further improving capital market development through legislation which allow mutual funds, securities

Final Modification of the program (Nov 13, 1998)

- Concentrate on public investment spending in the first half of 1999 and improve the timeliness

- Further strengthening of the social safety net through expansion existing programs
  - doubling the budgetary allocation of public works programs
  - temporary livelihood protection program and widening of the unemployment insurance system

- Move forward to the privatization program

- Support domestic demand include trade financing for small and medium sized enterprises

Sources:IMF Stand-by arrangmenet, Wall Street Journal

Section D

Critical Analysis of the Bailout Programs

Among the bailout programs in Thailand, Indonesia, and South Korea, these programs with common features in order to achieve the immediate, intermediate, and long-term goals that already mentioned in the above. The common features were:

- The fiscal policy as the very heart of the programs to have surplus in the current account
- Large amount of bank closure in order to limit the loses being accumulated and show that government were serious about the reform in order to get back confidence
- The programs required a rapid recapitalization in order to return the banking system to have solid foundation as quick as possible
- Tightening domestic credit through raised interest rate and reduced monetary availability in order to defend the exchange rate
- All of the foreign debt obligations were repaid through the credit from the bailout programs provided by International Monetary Fund, hopefully will restore international confidence
- Each program also included the non-financial structure change such as the reducing tariffs, opening sectors for foreign investment, and reducing monopoly powers.

Generally, the main parts designed for each country are similar as stated in the above. In contrast, these programs also have the different items that designed specific for each country situations. The difference were:

- The heavy weight on the social safety net in Indonesia rather than others because of the political disturbance during 1998
- In Korea, program emphasize on the negotiation among the foreign investment banks to roll over the short term debt interest rate

In the following part, I will do the critical analysis of the initial bailout programs. After the implementation of different programs, the respond from the markets were unexpected. In some sense, the initial version of the bailout programs was mis-targeting the causes of the Crisis. The policies required the governments to follow were too tough to accomplish during the Crisis period. Since these three bailout programs were similar and have a lot of common problems, I will point out the problems that are common in each program.

Financial Institutions closure or merge

In Thailand initial program, the International Monetary Fund proposed the closure of 56 unviable financial institutions immediate with the 91 financial institutions in total. Doubtless, these 56 unviable financial institutions needed to be merger or liquidated. In Indonesia, the International Monetary Fund proposed to close 16 banks that were legally insolvency. In Korea, the program focused on restructuring merchant banks that 14 of them were forced to close.

The open issue of this action of bank closure is that the method of closure and the time frame for the method. The International Monetary Fund proposed to close these 56 Thailand financial institutions and 16 Indonesia banks immediate, however, without a

more comprehensive program to reform financial sector. This will only deepen the severe situation in Thailand and Indonesia. In Korea, the closure of merchant bank brings out the rapid tightening of bank capital-adequacy ratios. In addition, the immediate closure will also bring up the bank run with all the other financial institutions and will be more difficult for them to operate daily normal lending.

The Recapitalization of Financial Institutions

Even the financial institutions were not in the situation of immediate closure, many of them required to recapitalize because of their large amount of non-performing loans. The International Monetary Fund tried to enforce them to early recapitalize of capital during the Crisis. For instance, in initial program of Indonesia, required the financial institutions to raise capital level to 9% by end of 1997, and 12% by the end of 2001. In Thailand, the financial need to have legal capital level or being taken over by the FIDF. The situation in South Korea was different, which the undercapitalized banks needed to have rehabilitation plan to do the recapitalize, because the initial program designed as a longer period to do the recapitalization.

These raise the question about the timeframe for recapitalization. This seems difficult for financial institutions to recapitalize capital during the Crisis, with the severe economic situation. This, obviously, deepens the credit crunch of Thailand and Indonesia. In addition, increase the amount of non-performing loans because banks forced to reclaim the debt early.

Monetary and Exchange Rate Policy

For the monetary policy, in Thailand, the new framework to control the aggregates monetary in the system associated with a new managed float for the Baht. In all three programs, the International Monetary Fund proposed to have a high interest rate and tight monetary supply to against the depreciation. It supposed the foreign investor would not flee out from the local market because of the attraction of high interest. However, the high interest will lead to a serious problem before the exchange rate was stabilized. The corporate, borrowed from banks, will not able to pay the high interest rate on their loan for a long period of time. This will finally forced certain amount of the corporate loans to become non-performing loans.

Fiscal Policy

The fiscal policy, which was the key to the credibility of the overall program, requests the Thailand, Indonesia, and South Korea with surplus of 1% of GDP in 1997/98. However, the fiscal policy was impossible to achieve during the Crisis time. Therefore, this seems the toughest provisions for the government to follow it.

From the above four analysis on bank closure, recapitalization, monetary policy, and fiscal policy showed that the initial bailout program was not provide a suitable solution to the crisis in Thailand. In some sense, this program deepened the severe situation in Thailand, Indonesia, and South Korea. Therefore, the International Monetary Fund provided different modification programs to the initial bailout program to make the initial program to be appropriate and realistic. A brief details of the modification

programs of Thailand, Indonesia, and South Korea presented in **Exhibit 3.2**, **3.4**, and **3.6** respectively.

Summary

In this Chapter, it covered the goals, common features and differences among the initial bailout programs of Thailand, Indonesia, and South Korea. It also provided the programs modification details as supplement to the initial programs. Overall, the initial programs of Thailand, Indonesia, and South Korea did not perform the expectations when the program was proposed.

Chapter 4

Empirical Analysis

The currency depreciated, stock markets plummeted, and inflation rate high.

In the previous chapter, I already dissected the three International Monetary Fund bailout programs that applied on Thailand, Indonesia, and South Korea during the Asian Financial Crisis. According to the details in the initial bailout programs, theoretically, they had four main problems that mistreat as the solutions of the Crisis. These problems worsened, instead of release, the severe situations in these countries. This raised the question on the purpose of each bailout programs, which the International Monetary Fund proposes to stabilize the economic.

In this chapter, I will conduct two statistical tests, which are event-study test and variance- ratio test, by using the data during the Crisis to investigate the real impact of the International Monetary Fund bailout programs on the granted countries. The event-study test is trying to investigate the abnormal return on different markets of the granted countries on the specific announcement day. The variance-ratio test is trying to determine the volatility of different market on the announcement day. This statistical analysis approach will show the actual market reactions in responding to these initial bailout programs on each of these countries.

The following section states the research objectives and hypotheses of the event-study model and variance-ratio model. Section B will be the mechanism on the methodology for these two models. Section C will be analysis of my result. Finally, Section D will be conclusions and limitations of my results.

Section A

Research Objective

My research objective is trying to answer: "Did the IMF Bailout Programs Stabilize the Markets of Southeast Asia during the Asian Financial Crisis?" To examine this question, we select the countries' data from Datastream. The sample range is 250 days before and 250 days after the announcement of each initial program by the International Monetary Fund. In using each country economic factors in applying to the two models respectively. These factors included (1) stock market exchange, (2) foreign exchange, and (3) interest rate. They can reflect the capability of the bailout programs to each country.

Event-Study Test:

In the event-study model, the main purpose is to determine the abnormal return on each of the markets associated with the bailout program announcement. We suppose that the program announcement will have certain degree of influence on different countries' markets. The equation that I am going to analyze the data will be as follow:

$$R_{it} = a_i + \beta_{asiai} R_{asia,mt} + \beta_{world,i} R_{world,mt} + \delta_i D_{i,t} + E_{i,t}$$

Where

i = country

$D_{it} = 1$ if event window

$D_{it} = 0$ if non event window

Therefore, we use the hypothesis testing to check each market reaction. The hypothesis of the event-study test consists of two parts:

H_0: $\beta = 0$ or $\delta = 0$ (null hypothesis)

H_1: $\beta <> 0$ or $\delta <> 0$ (alternative hypothesis):

The function of null hypothesis is as a control of the model, which means that the market do not have abnormal return. The alternative hypothesis is what we concern, which shows the abnormal return, either positive or negative, on the markets associated with the announcement of the bailout programs. We use 95% as our α-level to check for significance means that the result is significant if p-value is less than 0.05. If the p-value is greater than 0.05, we conclude H_0, otherwise H_1.

Variance-ratio Test:

In the variance-ratio model, its purpose is to compare the volatility of different markets before and after the bailout programs announcement. If the programs work stabling the markets effectively, the volatility of the markets after the announcement date will decrease. The equation presented in following:

Result = average (σ^2_{After}) / average $(\sigma^2_{Before}) \sim F_{n-1, m-1}$

Where:

F is the result of the above equation

Fc is the critical point

This leads to my hypothesis setting to check on it. The hypothesis of variance-ratio model consists of two parts:

H_0: average (σ^2_{After}) / average $(\sigma^2_{Before}) = 1$ (null hypothesis)

H_1: average (σ^2_{After}) / average $(\sigma^2_{Before}) <> 1$ (alternative hypothesis):

The function of null hypothesis is as a control of the model, which means that the market volatility does not change after the programs announcement. The alternative hypothesis is what we concern, which shows the volatility change, either greater than or less than one, on the markets associated with the announcement of the bailout programs. If the result is greater than one, means that the programs enhance the volatility or destabilize. On the other hand, the programs stabilize the volatility if result is smaller than one. We use 95% as our α-level to check for significance means that the result is significant if p-value is less than 0.05. We perform a F-test to check for the hypothesis. If the $F < Fc$, we conclude H_0, otherwise H_1.

Section B

Methodology

For both models, we collect the daily data from Datastream as the range of 250 days before and 250 days after each program announcement date. Therefore, the sample range for each country will be different. In Thailand, the sample period starts on August 26, 1996, and ends on July 27, 1998 with the program announced on August 11, 1997. In Indonesia, the sample period starts on November 15, 1996, and ends on October 16, 1998 with the announcement on October 31, 1997. In South Korea, the sample period starts on December 19, 1996, and ends on November 19, 1998 with the announcement on December 4, 1997. This 500 days sample range for each country includes all the important events of the Asian Financial Crisis.

Event-Study Test:

For my event-study model, I borrow the underlying concept from the Thompson's empirical methods of event studies in corporate finance. In the Thompson's method, it is concentrate on the corporate stock return. Here, it is concentrating on the countries different market indices. The model can help us to identify the relationship between dependent variables and independent variables. In addition, some similar models had already published by Brown and Warner (1980) (1985), Fama, Fisher, Jensen, and Roll (1969), and Kho and Stulz (1999). My model will be similar to the one in Kho and Stulz (1999) because of same data source and same approach in findings. In exception, they concentrate on the abnormal return on banking sectors, instead of the whole countries market indices.

For each of the country, in my model, use multiple regression to determine the relationship between different variables. For each country, I will have the regression models run on three sets of data, which are stock market, foreign exchange, and interest rate. For each set of data, I will have three event windows to determine the effect on the announcement. The first event window is a 1-day on the announcement of the program, t = 0. The second event window is in extension of 2 days before and 2 days after the announcement, t = -2, -1, 0, 1, 2, total 5-days. The last window is further extends the period with 5 days before and 5 days after the announcement, t = -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, total 11-days. The data will be 1 for the range of event window, and 0 for outside the range and as a dummy variable in each set of data.

In the set of stock market data, the dependent variable for Thailand, Indonesia, and South is the daily Bangkok S.E.T. price index, the Jakarta SE Composite price index, and the Korea SE Composite (KOSPI) price index respectively. The independent variables, which are Asia-DS market price index, World-DS market price index, are common for all three sets of data. All of these data will compute into logarithmic daily dollar return. The independent variables acts as a benchmark for the dependent variables, the return of the country market returns. The dummy variables will plot in.

In the set of foreign exchange data, the dependent variable is Thai Baht to US$, Indonesia Rupiah to US$, and Korea Won to US$. The common independent variable is Japanese Yen to US$, and dummy variables. All of these data will compute into logarithmic daily dollar return except dummy variables.

In the set of interest rate data, the dependent variable is Thailand Interbank O/C (BT)(SUSP), Indonesia Interbank Call (PIPU), and Korea Call Overnight. The common

independent variables are Japan Commercial Paper Overnight rate, and US Call money. These data will compute in order to find the difference between the day 0 and day 1.

Variance-ratio Test:

In the variance-ratio model, I compare the average variance of standard deviation before and after the announcement day with the same set of data that I used in the event-study model. All of these data is from the Datastream without further adjustment with logarithm. The computation is the average variance after the announcement divided by the average variance before the announcement. I assume the announcement date of the bailout programs in each country to be the mid-point of my comparison. I have ten series of time range for comparison and plot in a matrix table. These ten series are 5 days, 10 days, 20 days, 40 days, and 250 days before and after the announcement date. This variance ratio model will compare the stock market, exchange rate, and interest rate respectively.

Section C

Result

Event-Study Test:

Thailand

In **Exhibit 4.1**, it shows the estimate of the abnormal returns of Thailand's stock market, foreign exchange, and interest rate. In the data set for stock market, the value of δ, represent the abnormal returns that the model investigate. In the three windows, all δ are insignificant. The δ in 1-day and 5-days event window are in positive with the value of 0.0033 and 0.0015, which indicates with positive sign and close to the zero. The δ in 11-days event window is having negative abnormal return at -0.0011. The highest abnormal return in absolute is in 1-day event with 0.0033 but insignificant. In the data set for foreign exchange, the values of δ in all three events are insignificant. The highest abnormal return occurred on the 1-day event window with the value of 0.0041. Finally, for the interest rate data set, the δ is significant in the 1-day event window with the abnormal return at - 3.7579. According to my hypothesis, the H_1 is concluded. The announcement provides a negative impact on the interest rate return. The δ in the other event window are insignificant.

Indonesia

In **Exhibit 4.2**, the δ in the data set for stock market are insignificant for all event windows. The sign of δ are in negative, positive, and negative for 1-day, 5-days, and 11-days window respectively. In the data set of foreign exchange, all δ are insignificant with negative sign associate with them. In the data set of interest rate, all three δ are still

insignificant with the highest abnormal return on the 1-day window with the value of 2.5702. From the above, I cannot make any conclusions because all δ are in insignificant. Hence, the announcements of programs do have impact on the Indonesia markets.

South Korea

Exhibit 4.3 shows the results of South Korea. For the stock market data set, the δ in the 1-day window is significant with value at 0.0313. This concludes to the H_1 hypothesis that the announcement has the positive impact on the stock market on that specific day. This states the market respond to the announcement in a short time interval. The other two δ are insignificant with the value in decreasing trend. In the data set of foreign exchange, the δ in the first two windows is insignificant. The δ in 11-days window is significant with positive value of 0.0130. This suggests that the announcement has a significant impact on the foreign exchange with a longer time for market to response. Since the sign is positive, this indicates the currency is in depreciation. This implies the announcement cannot stop the Won depreciate relative to US Dollar and either enhances the depreciation. In the data set of interest rate, all three δ are significant. The value of δ is 5.6761 for 1-day window, 1.6853 for 5-days window, and 0.4651 for 11-days window. These show the interest is having positive abnormal returns, which implies the high interest rate associate with the announcement. In addition, when the sample time series increase, the value of δ is in decreasing. This shows the degree of impact from the South Korea fade with the time increase.

Exhibit 4.1
Estimate of the abnormal returns of Thailand on the day of the IMF program announcement on August 11, 1997

The following model are estimated for Thailand's stock marekt, foreign exchange market, and interest rate over the period from August 26, 1996 to July 27, 1998 (500 days) respectively:

Stock Market

$$R_{it} = \alpha_i + \beta^{A}_{i} R_{asia,t} + \beta^{W}_{i} R_{world,t} + \delta_i D_{i,t} + E_{i,t}$$

where: R_{it} **is the logarithmic daily dollar return on Datastream**
$R_{asia,t}$ **and** $R_{world,t}$ **are the corresponding market indices of Asia and World**
I is Thailand
t = (-250, +250) days on before and after the announcement day;
D is dummy variables take 1 for event window period, otherwise is 0;
p-value in bracket

Event Window	α	β^{A}_{i}	β^{W}_{i}	δ	R^2
1 - day	-0.0011	0.4137	0.3181	0.0033	0.0837
	[0.0112]	[0.0001]	[0.0904]	[0.7359]	
5 - days	-0.0011	0.4094	0.3241	0.0015	0.0837
	[0.0108]	[0.0001]	[0.0857]	[0.7362]	
11 - days	-0.0011	0.4130	0.3123	-0.0011	0.0837
	[0.0149]	[0.0001]	[0.0976]	[0.7096]	

Foreign Exchange

$$R_{it} = \alpha_i + \beta^{Yen/US\$}_{i} R_{Yen/US\$,t} + \delta_i D_{i,t} + E_{i,t}$$

where: R_{it} **is the logarithmic daily exchange rate of Baht/US$ return on Datastream**
others variables same as above.

Event Window	α	$\beta^{Yen/US\$}_{i}$	δ	R^2
1 - day	0.0003	0.3708	0.0041	0.0317
	[0.2958]	[0.0001]	[0.5565]	
5 - day	0.0003	0.3784	0.0017	0.0316
	[0.3138]	[0.0001]	[0.5932]	
11 - day	0.0003	0.3747	0.0002	0.3011
	[0.2979]	[0.0001]	[0.9131]	

Interest Rate

$$R_{it} = \alpha_i + \beta^{Japan}_{i} R_{Japan\ IR,t} + \beta^{US}_{i} R_{us\ IR,t} + \delta_i D_{i,t} + E_{i,t}$$

where: R_{it} **is the difference in daily interest rate change**
others variables same as above.

Event Window	α	β^{A}_{i}	β^{W}_{i}	δ	R^2
1 - day	0.0131	-0.5241	-0.1362	-3.7579	0.0123
	[0.8475]	[0.8008]	[0.9822]	[0.0138]	
5 - day	0.0041	-0.5881	-0.1106	0.1435	0.0003
	[0.9521]	[0.7784]	[0.9856]	[0.8346]	
11 - day	0.0098	-0.6084	-0.1367	-0.1939	0.0005
	[0.8868]	[0.7709]	[0.9822]	[0.6775]	

Exhibit 4.2
Estimate of the abnormal returns of Indonesia on the day of the IMF program announcement on October 31, 1997

The following model are estimated for Indonesia's stock marekt, foreign exchange market, and interest rate over the period from November 15, 1996 to October 16, 1998 (500 days) respectively:

Stock Market

$$R_{it} = \alpha_i + \beta^{A}_{i} R_{asia,t} + \beta^{W}_{i} R_{world,t} + \delta_i D_{i,t} + E_{i,t}$$

where: R_{it} **is the logarithmic daily dollar return on Datastream**
$R_{asia,t}$ **and** $R_{world,t}$ **are the corresponding market indices of Asia and World**
I is Thailand
t = (-250, +250) days on before and after the announcement day;
D is dummy variables take 1 for event window period, otherwise is 0;
p-value in bracket

Event Window	α	β^{A}_{i}	β^{W}_{i}	δ	R^2
1 - day	-0.0003	0.6284	0.0405	-0.0031	0.1360
	[0.5529]	[0.0000]	[0.7823]	[0.7634]	
5 - days	-0.0003	0.6284	0.0240	0.0076	0.1407
	[0.4428]	[0.0000]	[0.8695]	[0.0966]	
11 - days	-0.0003	0.6287	0.0381	-0.0002	0.1359
	[0.5534]	[0.0000]	[0.7945]	[0.9612]	

Foreign Exchange

$$R_{it} = \alpha_i + \beta^{Yen/US\$}_{i} R_{Yen/US\$,t} + \delta_i D_{i,t} + E_{i,t}$$

where: R_{it} **is the logarithmic daily exchange rate of Rupiah/US$ return on Datastream**
others variables same as above.

Event Window	α	$\beta^{Yen/US\$}_{i}$	δ	R^2
1 - day	0.0011	0.6108	-0.0078	0.0153
	[0.2250]	[0.0061]	[0.6967]	
5 - day	0.0012	0.6182	-0.0117	0.0183
	[0.1858]	[0.0055]	[0.1919]	
11 - day	0.0012	0.6142	-0.0047	0.0162
	[0.1940]	[0.0058]	[0.4392]	

Interest Rate

$$R_{it} = \alpha_i + \beta^{Japan}_{i} R_{Japan\ IR,t} + \beta^{US}_{i} R_{us\ IR,t} + \delta_i D_{i,t} + E_{i,t}$$

where: R_{it} **is the difference in daily interest rate change**
others variables same as above.

Event Window	α	β^{A}_{i}	β^{W}_{i}	δ	R^2
1 - day	0.0798	-2.9258	-3.2585	2.5702	0.0005
	[0.7984]	[0.7528]	[0.8689]	[0.7130]	
5 - day	0.0857	-2.9240	-3.2585	-0.0757	0.0003
	[0.7848]	[0.7530]	[0.8689]	[0.9808]	
11 - day	0.0491	-2.9062	-3.2581	1.6282	0.0014
	[0.8763]	[0.7543]	[0.8689]	[0.4441]	

Exhibit 4.3
Estimate of the abnormal returns of South Korea on the day of the IMF program announcement on December 4, 199

The following model are estimated for South Korea's stock marekt, foreign exchange market, and interest rate over the period from December 19, 1996 to November 19, 1998 (500 days) respectively:

Stock Market

$$R_{it} = \alpha_i + \beta^{A}_{i} R_{asia,t} + \beta^{W}_{i} R_{world,t} + \delta_i D_{i,t} + E_{i,t}$$

where: **R_{it} is the logarithmic daily dollar return on Datastream**
$R_{asia,t}$ and $R_{world,t}$ are the corresponding market indices of Asia and World
I is Thailand
t = (-250, +250) days on before and after the announcement day;
D is dummy variables take 1 for event window period, otherwise is 0;
p-value in bracket

Event Window	α	β^{A}_{i}	β^{W}_{i}	δ	R^2
1 - day	-0.0004 [0.4160]	0.3747 [0.0001]	0.3814 [0.0221]	0.0313 [0.0070]	0.0917
5 - days	-0.0004 [0.4300]	0.3690 [0.0002]	0.3839 [0.0221]	0.0052 [0.3192]	0.0801
11 - days	-0.0002 [0.6439]	0.3658 [0.0002]	0.3873 [0.0208]	-0.0055 [0.1230]	0.0827

Foreign Exchange

$$R_{it} = \alpha_i + \beta^{Yen/US\$}_{i} R_{Yen/US\$,t} + \delta_i D_{i,t} + E_{i,t}$$

where: **R_{it} is the logarithmic daily exchange rate of Won/US$ return on Datastream**
others variables same as above.

Event Window	α	$\beta^{Yen/US\$}_{i}$	δ	R^2
1 - day	0.0003 [0.4002]	0.1992 [0.0569]	0.0023 [0.8107]	0.0074
5 - day	0.0003 [0.4433]	0.1975 [0.0588]	0.0036 [0.4084]	0.0087
11 - day	0.0001 [0.8492]	0.1861 [0.0695]	0.0130 [0.0000]	0.0467

Interest Rate

$$R_{it} = \alpha_i + \beta^{Japan}_{i} R_{Japan\ IR,t} + \beta^{US}_{i} R_{us\ IR,t} + \delta_i D_{i,t} + E_{i,t}$$

where: **R_{it} is the difference in daily interest rate change**
others variables same as above.

Event Window	α	β^{A}_{i}	β^{W}_{i}	δ	R^2
1 - day	-0.0209 [0.3467]	0.4834 [0.4614]	-0.1947 [0.8649]	5.6761 [0.0000]	0.2101
5 - day	-0.0264 [0.2698]	0.5513 [0.4331]	-0.2011 [0.8698]	1.6853 [0.0000]	0.0926
11 - day	-0.0197 [0.4312]	0.6567 [0.3701]	-0.1908 [0.8812]	0.4651 [0.0060]	0.0164

Variance-ratio test:

Thailand

In **Exhibit 4.4**, it consists of three matrix tables to show the ratio of variance after and before of the program announcement. In these matrix tables, I only concentrate on the parallel comparison on the time series. This means my interest will fall into the (5vs5), (10vs10), (20vs20), (40vs40), and (250vs250) data.

In the stock market data set, only the (5vs5) data is insignificant. The other four results are significant. In (5vs5) result, the F value is less than one but insignificant. The F value in (10vs10) and (20vs20) are 3.3634 and 6.2983 with p-value of 0.0426 and 0.0001 respectively (significant). The result from (40vs40) and (250vs250) are 0.2668 and 0.3282, which are less than one and insignificant. The first three pass the F-test that concludes with alternative hypothesis. These results imply that the announcement after the first 5 days period decrease the volatility of the stock market. However, the volatility ratio increases after the 5 and 20 days period after announcement. Then, the ratio decreases to less than 0.5 for the 40 and 250 days period with no relationship to the announcement. The result shows that the announcement cannot help to stabilize the volatility within 20 trading days.

In the data set of foreign exchange, the (5vs5) result is insignificant and other results are significant. The (10vs10), (20vs20), and (250vs250) can pass the F-test, which all of them with the F-value are greater than one. This implies the program announcement cannot stabilize the exchange rate volatility. In the data set of interest rate, the results of (20vs20) and (250vs250) are significant and only (20vs20) ratio pass the F-test with a ratio greater than one. This implies the announcement does increase the

volatility within the first 20 days. In general, the announcement does not have the significant influence to the interest rate market. And this announcement does not have the capabilities to stabilize the severe economic situation in Thailand.

Indonesia

Exhibit 4.5 shows all the results. In the stock market data set, only the (20vs20) ratio is significant and passes the F-test. All of the ratio are greater than one, except the (5vs5) ratio is less than one but insignificant. This implies that the announcement cannot stabilize the volatility of the 20 days period. In the foreign exchange market, all results ratio can pass F-test and significant, except (5vs5) ratio. After the announcement, all the variances are increase when the time increases. This shows the announcement cannot control the volatility of exchange rate and causes the variance ratio to be higher. Finally, in the data set of interest rate, the first three results are significant and pass the F-test. The announcement increases the value of variance of interest rate with greater than one. This cannot stabilize the volatility of the interest rate. The Indonesia program announcement is unable to stabilize the economy. It worsens the situation of different markets with higher volatility.

South Korea

Exhibit 4.6 shows the results of South Korea. In the stock market, the (20vs20) ratio is less than one and is significant. The ratio for other four ranges are less than one but insignificant. This seems the announcement in South Korea stabilize the volatility in the stock market with the ratio less than 1. In the foreign exchange market, all the results

are significant and pass the F-test. In addition, all ratios are greater than one. For the (5vs5) ratio is 9.4505, in (10vs10) the ratio up to 13.3703. After 10 days, the ratios decrease against the time series increase. This shows the announcement affect the market in a fluctuation and in decreasing when time series increase. This can conclude the impact of the announcement on the volatility because of the general trend even though the two-direction trend. For the interest rate, the (5vs5) ratio is insignificant but with the ratio less than one. The ratios of (20vs20), (40vs40), and (250vs250), are greater than one and are significant. This implies that the announcement cannot reduce the volatility in the interest rate. In general, the South Korea announcement can stabilize its economic situation better than the programs in Thailand and Indonesia.

Exhibit 4.4
Variance-ratio of Thailand on the day of the IMF program announcment on August 11, 1997

The following model are estimated for Thailand's stock market, foreign exchange market, and interest rate over the period from August 26, 1996 to July 27, 1998 (500 days) respectively:

$$\text{average } (\sigma^2_{After}) \,/\, \text{average } (\sigma^2_{Before}) \sim F_{n-1,\, m-1}$$

where: **F is the result of the above equation**
Fc is the critical point
p-value in bracket
the model is one-tail

Stock Market

Before\After	5 days	10 days	20 days	40 days	250 days
5 days	F = 0.9642 Fc = 0.1565 [0.4863]	F = 8.1809 Fc = 5.999 [0.0291]	F = 15.7407 Fc = 5.8114 [0.0081]	F = 8.9229 Fc = 5.7192 [0.0225]	F = 61.6513 Fc = 5.6426 [0.0005]
10 days	F = 0.3964 Fc = 0.1667 [0.1934]	F = 3.3634 Fc = 3.1789 [0.0426]	F = 6.4714 Fc = 2.9476 [0.0035]	F = 3.6684 Fc = 2.8289 [0.0216]	F = 25.3463 Fc = 2.7265 [0.0000]
20 days	F = 0.3858 Fc = 0.1721 [0.1839]	F = 3.2734 Fc = 2.4227 [0.0142]	F = 6.2983 Fc = 2.1682 [0.0001]	F = 3.5703 Fc = 2.0299 [0.0021]	F = 24.6683 Fc = 1.9036 [0.0000]
40 days	F = 0.0288 Fc = 0.1748 [0.0017]	F = 0.2446 Fc = 0.3535 [0.0149]	F = 0.4706 Fc = 0.4926 [0.0402]	F = 0.2668 Fc = 0.5867 [0.0001]	F = 1.8431 Fc = 1.5511 [0.0118]
250 days	F = 0.0051 Fc = 0.1772 [0.0001]	F = 0.0436 Fc = 0.3668 [0.0001]	F = 0.0838 Fc = 0.5253 [0.0000]	F = 0.0475 Fc = 0.6447 [0.0000]	F = 0.3282 Fc = 0.8115 [0.0000]

Foreign Exchange

Before\After	5 days	10 days	20 days	40 days	250 days
5 days	F = 1.8029 Fc = 6.3882 [0.2910]	F = 5.2208 Fc = 5.9989 [0.0632]	F = 13.5919 Fc = 5.8114 [0.0106]	F = 15.6709 Fc = 5.7192 [0.0078]	F = 187.49 Fc = 5.6426 [0.0001]
10 days	F = 1.1399 Fc = 3.6331 [0.3974]	F = 3.3007 Fc = 3.1789 [0.0450]	F = 8.5931 Fc = 2.9477 [0.0012]	F = 9.9076 Fc = 2.8289 [0.0005]	F = 118.54 Fc = 2.7265 [0.0000]
20 days	F = 0.5236 Fc = 0.1721 [0.1721]	F = 1.5163 Fc = 2.4227 [0.2124]	F = 3.9476 Fc = 2.1682 [0.0022]	F = 4.5514 Fc = 2.0299 [0.0004]	F = 54.4553 Fc = 1.9036 [0.0000]
40 days	F = 0.0293 Fc = 0.1748 [0.0017]	F = 0.0849 Fc = 0.3535 [0.0002]	F = 0.2210 Fc = 0.4926 [0.0004]	F = 0.2548 Fc = 0.5867 [0.0001]	F = 3.0488 Fc = 1.5511 [0.0001]
250 days	F = 0.0897 Fc = 0.1772 [0.1437]	F = 0.2596 Fc = 0.3668 [0.0155]	F = 0.3759 Fc = 0.5253 [0.1586]	F = 0.7793 Fc = 0.6447 [0.1759]	F = 9.3242 Fc = 1.2323 [0.0000]

Interest Rate

Before\After	5 days	10 days	20 days	40 days	250 days
5 days	F = 0.4064 Fc = 0.1565 [0.2023]	F = 1.1252 Fc = 5.9989 [0.4915]	F = 4.1111 Fc = 5.8114 [0.0898]	F = 5.9897 Fc = 5.7192 [0.0461]	F = 2.8443 Fc = 5.6426 [0.1572]
10 days	F = 0.3227 Fc = 0.1667 [0.1441]	F = 0.8934 Fc = 0.3146 [0.4347]	F = 3.2643 Fc = 2.9477 [0.0367]	F = 4.7560 Fc = 2.8289 [0.0087]	F = 2.2584 Fc = 2.7265 [0.0892]
20 days	F = 0.2388 Fc = 0.1721 [0.0871]	F = 0.6612 Fc = 0.3393 [0.2671]	F = 2.4158 Fc = 2.1682 [0.0309]	F = 3.5197 Fc = 2.0299 [0.0023]	F = 1.6714 Fc = 1.9036 [0.0938]
40 days	F = 0.1003 Fc = 0.1748 [0.0183]	F = 0.2776 Fc = 0.3535 [0.0229]	F = 1.0142 Fc = 1.8599 [0.4677]	F = 1.4776 Fc = 1.7044 [0.1136]	F = 0.7017 Fc = 0.6905 [0.0578]
250 days	F = 0.0880 Fc = 0.1772 [0.0139]	F = 0.2437 Fc = 0.3668 [0.0124]	F = 0.8902 Fc = 0.5253 [0.4045]	F = 1.2970 Fc = 1.4482 [0.1234]	F = 0.6159 Fc = 0.8115 [0.0001]

Exhibit 4.5
Variance-ratio of Indonesia on the day of the IMF program announcment on October 31, 1997

The following model are estimated for Indonesia's stock market, foreign exchange market, and interest rate over the period from November 15 1996 to October 16, 1998 (500 days) respectively:

$$\text{average } (\sigma^2_{\text{After}}) \,/\, \text{average } (\sigma^2_{\text{Before}}) \sim F_{n-1,\, m-1}$$

where: **F is the result of the above equation**
Fc is the critical point
p-value in bracket
the model is one-tail

Stock Market

Before\After	5 days	10 days	20 days	40 days	250 days
5 days	F = 0.4368 Fc = 0.1565 [0.2211]	F = 1.2529 Fc = 5.999 [0.4444]	F = 2.8498 Fc = 5.8114 [0.1599]	F = 3.1259 Fc = 5.7192 [0.1371]	F = 11.0569 Fc = 5.6426 [0.0146]
10 days	F = 0.4056 Fc = 0.1667 [0.2017]	F = 1.1722 Fc = 3.1789 [0.4084]	F = 2.6663 Fc = 2.9476 [0.0670]	F = 2.9245 Fc = 2.8289 [0.0451]	F = 10.3448 Fc = 2.7265 [0.0003]
20 days	F = 0.4453 Fc = 0.1721 [0.2256]	F = 1.2774 Fc = 2.4227 [0.3106]	F = 2.9055 Fc = 2.1682 [0.0124]	F = 3.1870 Fc = 2.0299 [0.0043]	F = 11.2731 Fc = 1.9036 [0.0000]
40 days	F = 0.2067 Fc = 0.1748 [0.0668]	F = 0.5929 Fc = 0.3535 [0.2052]	F = 1.3487 Fc = 1.8600 [0.2100]	F = 1.4793 Fc = 1.7045 [0.1130]	F = 5.2326 Fc = 1.5511 [0.0000]
250 days	F = 0.0454 Fc = 0.1772 [0.0039]	F = 0.1303 Fc = 0.3668 [0.0011]	F = 0.2963 Fc = 0.5253 [0.0016]	F = 0.3250 Fc = 0.6447 [0.0001]	F = 1.1496 Fc = 1.2323 [0.1361]

Foreign Exchange

Before\After	5 days	10 days	20 days	40 days	250 days
5 days	F = 1.9038 Fc = 6.3882 [0.2741]	F = 5.2815 Fc = 5.9989 [0.0620]	F = 21.6293 Fc = 5.8114 [0.0044]	F = 792.80 Fc = 5.7192 [0.0000]	F = 10999. Fc = 5.6426 [0.0000]
10 days	F = 1.4736 Fc = 3.6331 [0.2882]	F = 4.0880 Fc = 3.1789 [0.0239]	F = 16.7417 Fc = 2.9477 [0.0001]	F = 613.653 Fc = 2.8289 [0.0000]	F = 8514. Fc = 2.7265 [0.0000]
20 days	F = 0.3682 Fc = 0.1721 [0.1696]	F = 1.0130 Fc = 2.4227 [0.4637]	F = 4.1489 Fc = 2.1682 [0.0016]	F = 152.075 Fc = 2.0299 [0.0000]	F = 2109.94 Fc = 1.9036 [0.0000]
40 days	F = 0.0198 Fc = 0.1748 [0.0008]	F = 0.0550 Fc = 0.3535 [0.0001]	F = 0.2251 Fc = 0.4926 [0.0005]	F = 8.2508 Fc = 1.7045 [0.0000]	F = 114.47 Fc = 1.5511 [0.0000]
250 days	F = 0.0140 Fc = 0.1772 [0.0004]	F = 0.0388 Fc = 0.3668 [0.0000]	F = 0.1590 Fc = 0.5253 [0.0001]	F = 5.8268 Fc = 1.4482 [0.0000]	F = 80.843 Fc = 1.2323 [0.0000]

Interest Rate

Before\After	5 days	10 days	20 days	40 days	250 days
5 days	F = 12.3662 Fc = 6.3882 [0.0160]	F = 6.4954 Fc = 5.9989 [0.0436]	F = 5.7012 Fc = 5.8114 [0.0517]	F = 4.8293 Fc = 5.7192 [0.0670]	F = 32.6646 Fc = 5.6426 [0.0018]
10 days	F = 12.2823 Fc = 3.6331 [0.0011]	F = 6.4514 Fc = 3.1789 [0.0052]	F = 5.6625 Fc = 2.9477 [0.0057]	F = 4.7965 Fc = 2.8289 [0.0084]	F = 32.4429 Fc = 2.7265 [0.0000]
20 days	F = 5.0505 Fc = 2.8951 [0.0061]	F = 2.6528 Fc = 2.4227 [0.0351]	F = 2.3284 Fc = 2.1682 [0.0365]	F = 1.9723 Fc = 2.0299 [0.0571]	F = 13.3406 Fc = 1.9036 [0.0000]
40 days	F = 1.7523 Fc = 2.6123 [0.1582]	F = 0.9204 Fc = 0.3535 [0.4819]	F = 0.8079 Fc = 0.4926 [0.3150]	F = 0.6843 Fc = 0.5867 [0.1203]	F = 4.6287 Fc = 1.5511 [0.0000]
250 days	F = 0.3006 Fc = 0.1226 [0.1772]	F = 0.1579 Fc = 0.3668 [0.0024]	F = 0.1386 Fc = 0.5253 [0.0000]	F = 0.1174 Fc = 0.6447 [0.0000]	F = 0.7940 Fc = 0.8115 [0.0347]

Exhibit 4.6
Variance-ratio of South Korea on the day of the IMF program announcment on December 4, 1997

The following model are estimated for South Korea's stock market, foreign exchange market, and interest rate over the period from December 19, 1996 to November 19, 1998 (500 days) respectively:

$$\text{average}(\sigma^2_{\text{After}}) \,/\, \text{average}(\sigma^2_{\text{Before}}) \sim F_{n-1,\, m-1}$$

where: **F is the result of the above equation**
Fc is the critical point
p-value in bracket
the model is one-tail

Stock Market

Before\After	5 days	10 days	20 days	40 days	250 days
5 days	F = 0.8925 Fc = 0.1565 [0.4575]	F = 1.0650 Fc = 5.999 [0.51660]	F = 0.9947 Fc = 0.3454 [0.4292]	F = 5.9601 Fc = 5.7192 [0.0465]	F = 11.8823 Fc = 5.6426 [0.0128]
10 days	F = 0.2671 Fc = 0.1667 [0.1081]	F = 0.3187 Fc = 0.3146 [0.0519]	F = 0.2977 Fc = 0.4128 [0.0125]	F = 1.7838 Fc = 2.8289 [0.1796]	F = 3.5563 Fc = 2.7265 [0.0206]
20 days	F = 0.1709 Fc = 0.1721 [0.0494]	F = 0.2039 Fc = 0.3393 [0.0095]	F = 0.1905 Fc = 0.4612 [0.0003]	F = 1.1414 Fc = 2.0299 [0.3886]	F = 2.2755 Fc = 1.9036 [0.0190]
40 days	F = 0.1121 Fc = 0.1748 [0.0225]	F = 0.1338 Fc = 0.3535 [0..0016]	F = 0.1249 Fc = 0.4926 [0.0000]	F = 0.7487 Fc = 0.5867 [0.1850]	F = 1.4927 Fc = 1.5511 [0.0664]
250 days	F = 0.0733 Fc = 0.1772 [0.0098]	F = 0.0875 Fc = 0.3668 [0.0002]	F = 0.0817 Fc = 0.5253 [0.0000]	F = 0.4894 Fc = 0.6447 [0.0044]	F = 0.9758 Fc = 0.8115 [0.4235]

Foreign Exchange

Before\After	5 days	10 days	20 days	40 days	250 days
5 days	F = 9.4504 Fc = 6.3882 [0.0257]	F = 14.4664 Fc = 5.9989 [0.0103]	F = 17.9900 Fc = 5.8114 [0.0062]	F = 12.5001 Fc = 5.7192 [0.0120]	F = 7.8539 Fc = 5.6426 [0.0276]
10 days	F = 8.7343 Fc = 3.6331 [0.0036]	F = 13.3703 Fc = 3.1789 [0.0003]	F = 16.6268 Fc = 2.9477 [0.0001]	F = 11.5529 Fc = 2.8289 [0.0003]	F = 7.2588 Fc = 2.7265 [0.0014]
20 days	F = 4.1011 Fc = 2.8951 [0.0146]	F = 6.2778 Fc = 2.4227 [0.0003]	F = 7.8069 Fc = 2.1682 [0.0001]	F = 5.4245 Fc = 2.0299 [0.0001]	F = 3.40833 Fc = 1.9036 [0.0015]
40 days	F = 3.5451 Fc = 2.6123 [0.0147]	F = 5.4268 Fc = 2.1306 [0.0001]	F = 6.7486 Fc = 1.8600 [0.0000]	F = 4.6892 Fc = 1.7045 [0.0000]	F = 2.9462 Fc = 1.5511 [0.0001]
250 days	F = 8.3165 Fc = 2.4079 [0.0000]	F = 12.7306 Fc = 1.9176 [0.0000]	F = 15.8314 Fc = 1.6285 [0.0000]	F = 11.0002 Fc = 1.4482 [0.0000]	F = 6.9115 Fc = 1.2323 [0.0000]

Interest Rate

Before\After	5 days	10 days	20 days	40 days	250 days
5 days	F = 0.2150 Fc = 0.1565 [0.0828]	F = 0.1450 Fc = 0.2752 [0.0080]	F = 2.4584 Fc = 5.8114 [0.1985]	F = 2.3345 Fc = 5.7192 [0.2128]	F = 23.3645 Fc = 5.6426 [0.0035]
10 days	F = 0.2766 Fc = 0.1667 [0.1442]	F = 0.1867 Fc = 0.3146 [0.0099]	F = 3.1638 Fc = 2.9477 [0.0404]	F = 3.0043 Fc = 2.8289 [0.0414]	F = 30.0681 Fc = 2.7265 [0.0000]
20 days	F = 0.4542 Fc = 0.1721 [0.2318]	F = 0.3065 Fc = 0.3393 [0.0367]	F = 5.1945 Fc = 2.1682 [0.0004]	F = 4.9326 Fc = 2.0299 [0.0002]	F = 49.3676 Fc = 1.9036 [0.0000]
40 days	F = 0.5492 Fc = 0.1748 [0.2993]	F = 0.3705 Fc = 0.3535 [0.0577]	F = 6.2805 Fc = 1.8599 [0.0000]	F = 5.9638 Fc = 1.7044 [0.0000]	F = 59.6889 Fc = 1.5511 [0.0000]
250 days	F = 0.3358 Fc = 0.1772 [0.1463]	F = 0.2265 Fc = 0.3668 [0.0095]	F = 3.8398 Fc = 1.6285 [0.0000]	F = 3.6463 Fc = 1.4482 [0.0000]	F = 36.4934 Fc = 1.2323 [0.0000]

Section D

Conclusion

The limitation for the above models is that we only consider the initial program announcement date in order to determine our event window. This ignores other factors and events occurred during the sample period for each country. In addition, the model did not consider the other non-economic related announcements. The degree of these models of the dependent variables against the independent variables limited by its power because of the small amount of event windows, which 3 events for each country only. This is the reason for the coefficient of determination in event-study model is weak.

Overall, we examined the impact of the International Monetary Fund programs on the abnormal return and volatility on the stock market, foreign exchange, and interest rate. I have my statistical conclusion as the following points.

Firstly, in Thailand, the determination of the abnormal return of the markets associated with the announcement. The model cannot explain the abnormal return of dependent variables related to the announcement appropriate. I cannot conclude the program announcements have positive or negative impact on the economic. The abnormal return may associate with the other non-economic factors or political issues. The variance-ratio shows that the stock market and foreign exchange rate did not stabilize within 40 days, either approximates 2 months. Moreover, the interest rate is increasing volatility after the announcement. From the above, I conclude that the Thailand program unable to stabilize the economy within 2 months. In the same sense the bailout program is expensive but cannot have an instant positive response.

Secondly, the situation in Indonesia is similar to Thailand. The abnormal return is not depended on the announcement of the program. In addition, the announcement does not have large degree of impact on the economy because of the increasing fluctuation of the volatility toward unfavorable level in the three samples. This is hardly to conclude that the Indonesia program stabilizes its economic situation. The preservative conclusion for Indonesia is that the program did not have any impacts on its economy. In fact, the Indonesia program destabilizes the markets volatility.

Thirdly, the result in South Korea has a better explanation than the result in Thailand and Indonesia. I find out that the announcement has a positive abnormal return in 1-day window of stock market. After the announcement, the South Korean currency keeps depreciation and the interest rate is increasing. This concludes that the announcement did not ease the pain of the Crisis in South Korea immediately. In addition, the announcement did stabilize the stock market with the ratio less than one. It decrease the foreign exchange ratio in terms stabilize the currency exchange. However, the announcement can only stabilize the short-term interest rate volatility. In the South Korea, the announcement effectively stabilizes the stock market and the short-term interest rate. On the other hand, it has limited impact on the currency market. Therefore, the South Korea program is costly but the degree of benefit cannot outweigh the high cost associate with it. In general, the South Korea program has the highest capabilities to stabilize the economy situation rather than the Thailand program and Indonesia program.

Chapter 5

Conclusion

Through the above four chapters, I have conducted a research on the topic of the, "Did the IMF Bailout Programs Stabilize the Markets of Southeast Asia during the Asian Financial Crisis?" Each chapter has its objective and related and can lead to my conclusion of my thesis.

Chapter 1, it first covers the background of the International Monetary Fund, which had an important role in the Asian Financial Crisis. Second, it discusses about the economic situations in Asia region from 1987-96, ten years before the Crisis. It discovers that the economic situations were strong and optimistic associate with high economic growth rate in the Asia region. This chapter provides a big picture of the International Monetary Fund and Asia region with detail information for who is unfamiliar with them. Although the economic situations in the Asia region were positive, in fact the Crisis happened during 1997-98. This raises several questions. What are the causes of the Crisis? What specific events associated with it? What are the roles of International Monetary Fund? Chapter 2 handles all of the above questions precisely.

Chapter 2, it first mentions about the important events during the Crisis period that most of them related to the International Monetary Fund. Then, it goes to dissect the six major causes of the Crisis. This provides a broad literature on different opinions, from economists and financial analysts, on this Crisis. The objective of this chapter is to provide detail information on the causes of the Crisis. It also states the relationship between the International Monetary Fund and Asian countries.

From the above chapters, they enable us to make critical analysis on the Crisis through the extensive information in the background of the Crisis. In Chapter 3, it concentrates on the explicit bailout programs applied on Thailand, Indonesia, and South Korea from the International Monetary Fund. It provides the main provisions in each program with comparison and contraction. In addition, I criticize these bailout programs with the pros and cons on them. The objective is trying to understand the actions of the International Monetary Fund and to conclude on their efficiency of these programs.

Chapter 3 concludes that these bailout programs unable to ease the economic situations. Is it true? In Chapter 4, it uses the statistical method to show the actual market reactions in respond to the announcement on each programs during the Crisis period.

Open Issues - what happen since the crisis

After the end of the Crisis, the International Monetary Fund was blamed by large amount of non-IMF economists and financial analysts on their responses on the Crisis, especially on the bailout programs. Since these arguments and blames, these raise the instability of the organization structure and goals of the International Monetary Fund.

According to the news in the March 7, 2000 issue of Wall Street Journal, it stated the majority opinion of the 11 members congressional appointed panel to investigate the future of the global financial institutions. Moreover, they come up with two recommendations to the International Monetary Fund in the future. The recommendations are as follow:

1. IMF should stop lending to the poorest countries and specialize in emergency lending to countries that lose access to private financial markets;
2. World Bank and IMF should write off its all loans to the poorest, if they implement effective economic and social policies;
3. IMF should be significantly reduce its role in running the world than the strategy right now;
4. Stop acting as an international poorhouse that allocates money from rich countries to the poor countries.

IMF has given too little attention to improving financial structures in developing countries and too much too expensive rescue operations in the poorest countries, which is concluded by the investigation panel. This is exactly appropriate description in the bailout programs that granted to Asian countries.

Conclusion

Overall, the results are interesting in response to my topic. The conclusions are in follow:

1) The policies in the bailout programs consist of four major problems unable to ease the severe situation in these countries. In additional, these problems may cause the situation worsen;
2) Thailand program does not have significant impact on market within 2 months. This means that the degree capability of the program to stabilize the economy is low. The program cannot generate immediate impact on the markets with the high cost trade off.

3) In Indonesia, the announcement is unrelated to the abnormal return on the market. With the mismatching program provisions. I conclude that the program does not stabilize the economy. In fact, the markets are more destabilize after the announcement.

4) In South Korea, the program performs better than the Thailand and Indonesia. It does have a little positive impact. In addition, the volatility in the markets decreases after the announcement of the program. This is because South Korea trying to negotiate with foreign investors to roll over their loans instead of using large amount of the bailout program to repay their loans.

5) Among these three programs implemented, only the South Korea program can stabilize the market. The other two programs that implemented in Thailand and Indonesia are unable to stabilize the economy.

6) The International Monetary Fund policy on the crisis is too costly and the reaction is too little. This result same as the current investigation by the 11 members countries.

Appendix
Asian Financial Crisis Chronology, 1997 - 98

1997		
Date	**Entity**	**Description**
10-Mar	**Thailand**	Thai government promises will buy $3.9billion in bad property debt from financial institutions but break the promise.
	IMF *	Managing Director Michel Camdessus says "he do not see and reason for the Crisis to develop further."
01-10-May	**Japan**	Japanese officials hinted that they might raise interest rates.
14-15-May	**Thailand**	Its currency, Baht, is hit by a massive attack by speculators.
23-May	**Thailand**	Moves to save the largest financial company, Finance One, fails
19-Jun	**Thailand**	Amnuay Viravan, staunchly against devaluing the Baht, resigns as finance Minister. The PM Chavalit Yongchaiyudh says, "We will never devalue the Baht."
27-Jun	**Thailand**	Thai Central Bank suspends operation of 16 cash-strapped finance companies and orders them to submit merger or consolidation plans.
30-Jun	**Thailand**	Prime Minister Chavalit Yongchaiyudh assures that it will be no devaluation of the Baht
2-Jul	**Thailand**	The Bank of Thailand announces a managed float of the Baht and calls on the IMF for "technical assistance". The announcement effectively devalues the Baht by about 15-20 percent at a record low of 28.80 to the US Dollar. **This is trigger for the East Asian Crisis.**
	Philippines	Philippines Central Bank is forced to intervene heavily to defend the peso.
8-Jul	**Malaysia**	Central Bank, Bank Negara, has to intervene in defense of Ringgit.
11-Jul	**Philippines**	Central Bank says that that will allow the Peso to move in a wider range against the US Dollar.
	IMF	Backs the move and Managing Director Camdessus says he would recommend the **IMF board** to approve the request of Philippines in an extension of its Extended Fund Facility (EFF).
14-Jul	**IMF**	Offer the Philippines almost $1.1 billion in financial support under fast-track regulations passed after the 1995 Mexican Crisis.
	Malaysia	Central Bank, Bank Negara, abandons the defense of Ringgit.
17-Jul	**Singapore**	Singapore Monetary Authority allows the depreciation of the S$.

Date	Entity	Description
24-Jul	**Malaysia**	The Ringgit hit 38-month low of 2.6530. Prime Minister Mahathir Mohamad launches bitter attack on "rogue speculators"
	Hong Kong	HK Dollar remains steady, but already spent US$1 billion to intervene during July.
26-Jul	**Malaysia**	Prime Minister Mahathir Mohamad names hedge fund manager George Soros as the man responsible for the attack on the Ringgit. Later called Soros as a "moron".
28-Jul	**Thailand**	Calls in the **IMF** for help.
5-Aug	**Thailand**	It unveiled austerity plan and complete revamp of finance sector as part of **IMF** suggested policies for a rescue package. Central Bank suspends 48 finance firms.
11-Aug	**IMF**	It unveils the rescue package for Thailand including loans totaling in $16 billion.
14-Aug	**Indonesia**	It abolishes its system of managing the exchange rate with a band and allowed to float. Rupiah plunges to 2,755. Bank Indonesia tries mopping up liquidity with high interest rates.
20-Aug	**IMF**	It approves a $3.9 billion credit for Thailand. The package is now total $16.7 billion.
23-Aug	**Malaysia**	Prime Minister Mahathir Mohamad blames US financier George Soros for leading attack on East Asian currencies. "All these countries have spent 40 years trying to build up their economies and a moron like Soros comes along."
20-Sep	**Malaysia**	Prime Minister Mahathir Mohamad tells delegates to the IMF/World Bank annual conference in Hong Kong that currency trading is immoral and should be stopped.
21-Sep	**Hedge Fund**	George Soros says, "Dr. Mahathir is a menace to his own country."
8-Oct	**Indonesia**	Asks the **IMF** for financial assistance.
31-Oct	**IMF**	It gives Indonesia $23 billion financial support package.
3-Nov	**Asian**	Stock markets rallied on the day as a financial aid package for Indonesia helped restore calm to the region, enable investors there to refocus on their domestic market.
5-Nov	IMF	Initial data of Indonesia program
6-Nov	**Korea**	Bank of Korea once again intervened Thursday in an attempt to halt the local currency slide versus the US dollar.
	IMF	Managing Director Michel Camdessus said that the **Fund's** financial support package for Indonesia should break a vicious cycle of economic destabilization in Asia. He said, "I do not believe that the situation in South Korea is as alarming as the one in Indonesia a couple of weeks ago. We are following very attentively and with an attitude of confidence.

Date	Entity	Description
14-Nov	**Korea**	Majority parties vowed Friday to pass a reform package would clean up debt-ridden banks.
17-Nov	**Korea**	Abandoned its defense of the battered won, sending the currency smashing through the psychological 1,000/US dollar level.
18-Nov	**Korea**	The failure to pass Financial Reform Bills suggests that the **IMF** will be required.
19-Nov	**IMF**	Deputy finance ministers meeting in Manila issued a statement that proposed the formation of a new mechanism that would enhance the **IMF**'s role in identifying possible financial crises in Asia.
19-Nov	**Korea**	New finance and economy minister said he will form an emergency economic presidential advisory committee to tackle the country's current troubles, but does not foresee the country requiring assistance from the **IMF**.
20-Nov	**Korea**	Dashing any early hope for controlling its financial turmoil, South Korea's currency fell 10 percent in trading.
21-Nov	**Korea**	Under the pressure of currency and investors, it seeks a rescue package from the **IMF**
25-Nov	**S&P**	It lowers the South Korea's currency ratings.
	IMF	First modification on Thailand program
1-Dec	**Korea**	It and **IMF** resumed talks on a package to rescue the economy after an initial deal floundered.
4-Dec	**Korea**	A record loan package led by the **IMF** to bail out South Korea helped calm jitters in most regional markets.
5-Dec	**Korea**	Agreed to lower its economic growth to 3 percent in 1998 from a projected 6 percent this year under the terms in **IMF**'s rescue package.
	IMF	Revises down its forecasts for world economic growth as Asia's economic crumble.
8-Dec	**Indonesia**	President Suharto began an unprecedented 10-day rest at home that draw attention on Indonesia's uncertain political succession.
	Malaysia	Finally confronting its mounting financial woes.
9-Dec	**Indonesia**	Rumors that President Suharto is gravely ill swept Southeast Asian currency markets and sending the Rupiah into a tail spin.

Date	Entity	Description
15-Dec	**Korea**	It stepped back from the financial brink as the prospect of billions of dollars in emergency credit from the IMF restored confidence in the shattered markets.
	IMF	The board meeting in Washington considers a Korean request to speed delivery of a portion of the $60 billion international bailout announced Dec. 3.
18-Dec	**Korea**	Fed up with their economy's freefall, voters in South Korea Thursday elected longtime dissident Kim Dae-jung to serve a five-year term as president, leaving some concerned that the country's financial markets will be further battered.
24-Dec	**IMF**	Pledged to speed up $10 billion in bailout money to support its embattled economy. It said in a statement that it would make $2 billion available to South Korea on Dec. 30 from the $21 billion already set aside for the financially troubled country. The **IMF** plans to dole out another $2 billion to Seoul on Jan 8.
26-Dec	**Korea**	Won rebounded strongly on Friday, showing up other Asian currencies that settled in well-worn ranges after being numbed by holiday lethargy.
30-Dec	**Banks**	The world's major banks prepared to join an effort to throw ailing South Korea a lifeline by rolling over a mountain of short-term debt due to be paid on Wednesday. The effort beginning Monday with an announcement from a group of key U.S. and German banks is expected to help Korea manage its estimated $100 billion in short-term debt, of which $15 billion comes due by Dec. 31 and another $15 billion on next month.

1998		
Date	**Entity**	**Description**
2-Jan	**Banks**	Major U.S. and European banks announced Monday that they would allow South Korean customers more time to pay off an estimated $15 billion in short-term debt which came due on December 31, several smaller banks are unwilling to do the same.
6-Jan	**Thailand**	Announced that it would ask the **IMF** to ease the terms of its $17.2 billion bailout package and as its currency, the Baht, fell to a new low of less than half its value last summer. Prime Minister Chuan Leekpai said Thailand would seek to soften an **IMF** requirement that it produce a budget surplus this year.
9-Jan	**Indonesia**	Concern over Indonesia hit Asian stocks on Friday, but currencies won some support on hopes of an imminent deal between U.S. banks and heavily indebted Indonesian companies.
	Korea	A proposal for the government to issue about $25 billion in bonds won increased support at a meeting of international banks. But several major banks still hesitant about endorsing the plan, and the Korean government indicating it needs another week to make a decision.
13-Jan	**IMF**	**IMF** and Indonesia appear to be near an agreement over the **IMF** bailout.
15-Jan	**Indonesia**	President Suharto announced wide-ranging economic reforms that, if carried out, would overturn the country's entrenched ways of doing business and curb its economic growth.
27-Jan	**Indonesia**	Announced new reforms to restore confidence in its banking sector, guaranteeing commercial bank obligations and allowing overseas investment in local banks. It also announced a freeze on debt payments until a new framework is worked out between international lenders and Indonesian borrowers on estimated at $66 billion debt.
29-Jan	**Korea**	Government and global creditors agreed to exchange about $24 billion of the Asian nation's short-term debt for government-guaranteed loans in a deal **expected to end Korea's liquidity crisis.** Under the deal, Korean banks can exchange their short-term non-trade credits for new loans with maturities of one, two or three years, and with a floating interest rate of 2.25 percent, 2.5 percent and 2.75 percent over the six-month London inter-bank offered rate (LIBOR).
2-Feb	**Asia**	Asian markets roared into the Year of the Tiger with evidence that foreign confidence in the region was returning. **"It's all over, the Asian crisis.** That seems to be the sentiment this morning," said Callum Henderson, managing analyst at MMS Int'l.

Date	Entity	Description
12-Feb	**IMF**	It would relax a key condition of Thailand's economic bailout requiring it to post a budget surplus in fiscal 1998. Instead of surplus of 1 percent, Thailand will allow to return a budget deficit of 1 to 2 percent of GDP in the year ending on Sept 30. Also, IMF allows easing Thai's high domestic interest rates.
13-Feb	**IMF**	Warned Indonesia not to impose a rigid currency regime now because it could shake the confidence in the world. Proposed a series of economic reforms before establishing a currency board to fix the value of the Rupiah currency.
16-Feb	**IMF**	The Rupiah dived through 10,000 in early trade in the wake of weekend reports that the IMF had threatened to withdraw assistance to Indonesia if it adopts a currency board.
17-Feb	**Indonesia**	President Suharto fired Indonesia's central bank governor who opposed government plans to create a fixed exchange rate system for the Rupiah through a currency board. The **IMF, the United States, Germany and Australia** have all come out in opposition to such a board, saying developments in Indonesia did not favor it at this time. The IMF has threatened to withhold further money under a $43 billion bailout package.
	Korea	Separately, the **IMF** released a further $2 billion to South Korea Tuesday, bringing total **IMF** lending to about $15 billion so far out of its $21 billion Seoul rescue package agreed last December.
18-Feb	**IMF**	**IMF** officials held out hope of a compromise over Indonesia's controversial plan to peg its currency to the dollar.
20-Feb	**Indonesia**	President Suharto made a surprise move to restore fading confidence among Indonesians in their government by guaranteeing a pay-out on all legal deposits in 16 banks liquidated last year. Government previously had said it would cover up to 20 million Rupiah in each account of the 16 banks, which amounted to 1.7 trillion Rupiah.
21-22-Feb	**Indonesia**	Suspended its plan to implement a controversial currency-board system that would have pegged the Rupiah to the U.S. dollar, due to intense pressure from the U.S. and other members of the G-7 industrialized countries, as well as from the IMF.
24-Feb	**IMF**	Second modification on Thailand program
2-Mar	**Indonesia**	Suharto has been at odds with the **IMF** over stringent economic measures Indonesia agreed under a rescue package with the multinational lending institution. Suharto said that the IMF's plan was not working and that Indonesia needed an IMF-Plus plan.
5-Mar	**Indonesia**	President Suharto reaffirmed his commitment to **IMF** reforms.

Date	Entity	Description
9-Mar	**Indonesia**	A simmering dispute between the **IMF** and Indonesia cast a shadow over Pacific Rim markets, sending some regional markets down and limiting gains in others. Over the weekend news broke that the IMF would delay the disbursement of funds to Indonesia.
21-Mar	**IMF**	The **IMF** and the Indonesian government have made ``considerable progress'' toward a new deal to counter the country's grave economic crisis
26-Mar	**Indonesia**	Indonesia said it is close to a comprehensive package of measures to lift the country out of its worst economic crisis in three decades, which include a review of reforms Indonesia has agreed to in exchange for a $40 billion bailout.
8-Apr	**Indonesia**	Indonesia said that it had reached agreement with the **IMF** on a new package of economic reforms and targets, which the **IMF** would watch closely to ensure compliance.
21-Apr	**Indonesia**	Raised interest rates across the board Tuesday shortly before launching a series of reform measures agreed to with the **IMF** in order to get the country's battered economy moving.
2-May	**IMF**	Fourth modification of South Korea program
13-May	**Indonesia**	Indonesian security forces fired shots Wednesday as crowds joined campus protests around Trisakti University in Jakarta where the 6 students were killed. They were the first student deaths in three months of protests against the 32-year rule of Suharto.
15-May	**Indonesia**	Indonesian financial and commodity markets were virtually abandoned, swamped by fear in the aftermath of four days of rioting, arson and looting in Jakarta.
21-May	**Indonesia**	President Suharto announced his decision to resign from office. The political earthquake which led to Suharto's resignation on Thursday has already had a knock-on effect on the economy, with institutions such as the **IMF**, the **World** Bank and the ADB putting vital bailout funds on hold.
	IMF	It has come under fire for making a bad situation worse in Indonesia but analysts say Jakarta has little choice but to rely on the fund, no matter who rules the troubled nation
25-May	**IMF**	Delayed disbursement of the next installment of a $10 billion balance-of-payments loan, the central plank of the reform package, pending reassessment of the political and economic situation in Indonesia.
26-May	**IMF**	Third Modification of Thailand program
24-June	**Indonesia**	Released Second Supplementary Memorandum of Economic and Financial Policies

Date	Entity	Description
24-July	**IMF**	Fifth modification of Korea program
29-July	**Indonesia**	Letter of Intent
25-Aug	**IMF**	Fourth Modification of Thailand program
13-Nov	**IMF**	Fifth Modification of Korea program
1-Dec	**IMF**	Fifth Modification of Thailand program

References

Abeysinghe, T., 1999, Thai Meltdown and Transmission of Recession within ASEAN 4 and NIE 4, WIDER/World Bank Research Project.

Brown, S., and J. Warner, 1980, Measuring security price performance, J. Finance Econ. 8, 205 – 258.

Brown, S., and J. Warner, 1985, Using daily stock return, J. Finance Econ. 14, 3 – 31.

Brown, S. J., W. N. Goetzmann and J. Park, 1998, Hedge Funds and the Asian Currency Crisis of 1997, National Bureau of Economic Research Working Paper No. 6427.

Burnside, C., M. Eichenbaum and S. Rebelo, 1998, Prospective Deficits and the Asian Currency Crisis, National Bureau of Economic Research Working Paper No. 6758.

Bustelo, P., C. Garcia and I. Olivie, 1999, Global and Domestic Factors of Financial Crises in Emerging Economics: Lessons from the East Asian Episodes (1997-1999), ICEI Working Paper No. 16.

Chang, R. and A. Velasco, 1998, The Asian Liquidity Crisis, National Bureau of Economic Research Working Paper No. 6796.

Chinn, M. D., 1998, Before the Fall: Were East Asian Currencies Overvalued?, National Bureau of Economic Research Working Paper No. 6491.

Chinn, M. D., 1998, On the Won and Other East Asian Currencies, National Bureau of Economic Research Working Paper No. 6671.

Choe, H., B.C. Kho and R.M. Stulz, 1999, Do Foreign Investors Destabilize Stock Markets? The Korean experience in 1997, Journal of Financial Economics, 54, 227-264.

Corsetti, G., P. Pesenti, and N. Roubini, 1998, Fundamental determinants of the Asian crisis: a preliminary empirical assessment, JIMF- Fordham University Conference.

Corsetti, G., P. Pesenti and N. Roubini, 1998, Paper Tigers? A Model of the Asian Crisis, National Bureau of Economic Research Working Paper No. 6783.

Corsetti, G., P. Pesenti and N. Roubini, 1998, What Caused the Asian Currency and Financial Crisis? Part I: A Macroeconomic Overview, National Bureau of Economic Research Working Paper No. 6833.

Corsetti, G., P. Pesenti and N. Roubini, 1998, What Caused the Asian Currency and Financial Crisis? Part II: The Policy Debate, National Bureau of Economic Research Working Paper No. 6834.

Crafts, N., 1998, East Asian Growth Before and After the Crisis, International Monetary Fund Working Paper WP/98/137.

Doner, R.F. and A. Ramsay, 1999, Thailand: From Miracle to Economic Crisis, Asian Contagion, Westview Press, 171 – 207.

Driscoll, D. D., 1998, What Is the International Monetary Fund?, International Monetary Fund.

Eun, C. S. and B. G. Resnick, 1998, International Financial Management, Irwin/McGraw- Hill.

Fama, E., L. Fisher, M. Jensen and R.Roll, 1969, The adjustment of stock prices to new information, Int. Econ. Rev. 10, 1 – 21.

Fischer, S., 1998, The Asian Crisis: A View from the IMF, International Monetary Fund, Washington, D.C.

Fischer, S., 1998, The Asian Crisis, the IMF, and the Japanese Economy, International Monetary Fund, Washington, D.C.

Fischer, S., 1998, The IMF and the Asian Crisis, International Monetary Fund, Washington, D.C.

Frankel, J. A., 1998, The Asian Model, The Miracle, The Crisis and The Fund, U.S. International Trade Commission.

Frankel, J. A., D. Romer and T. Cyrus, 1996, Trade and Growth in East Asian Countries: Cause and Effect?, National Bureau of Economic Research Working Paper No. 5732.

Greenspan, A., 1998, Testimony of Chairman Alan Greenspan before the Committee on Banking and Financial Services, U.S. House of Representatives, Federal Reserve Board.

Gregorio, J. D. and R. O. Valdes, 1999, Crisis Transmission: Evidence from the Debt, Tequila, and Asian Flu Crises, WIDER/World Bank research project.

Helliwell, J. F., 1996, Economic Growth and Social Capital in Asia, National Bureau of Economic Research Working Paper No. 5470.

Hoshi, T. and A. Kashyap, 1999, The Japanese Banking Crisis: Where did it come from and How will it end?, National Bureau of Economic Research Working Paper No. 7250.

IMF, 1996, The Role of the IMF: Financing and Its Interactions with Adjustment and Surveillance, International Monetary Fund, Washington, D.C.

IMF, 1997, IMF Approves Stand-by Credit for Thailand, International Monetary Fund, Washington, D.C.

IMF, 1997, Republic of Korea IMF Stand-By Arrangement, International Monetary Fund, Washington, D.C.

IMF, 1998, Indonesia—Memorandum of Economic and Financial Policies, International Monetary Fund, Washington, D.C.

IMF, 1999, International Financial Statistic Yearbook, International Monetary Fund, Washington, D.C

IMF, 1998, Statement by the Managing Director on the IMF Program with Indonesia, International Monetary Fund, Washington, D.C.

IMF, 1999, The IMF at a Glance, International Monetary Fund, Washington, D.C.

IMF, 1999, The IMF's Response to the Asian Crisis, International Monetary Fund, Washington, D.C.

Indonesia, 1997, Letter of Intent of the government of Indonesia, Indonesia.

Ito, T., 1999, Capital Flows in Asia, National Bureau of Economic Research Working Paper No. 7134.

Ito, T. and M. Melvin, 1999, The Political Economy of Japan's Big Bang, Arizona State University Working Paper No. 99/8.

Jackson, K. D., 1999, Introduction: The Roots of the Crisis, Asian Contagion, Westview Press, 1 – 27.

Karolyi, G. A., 1999, Did the Asian Financial Crisis, Scare Foreign Investors Out of Japan?, Dice Center Working Paper WP 99-6, Ohio State University.

Kawai, M., H. J. Hahm and G. Iarossi, 1999, Corporate Foreign Debt in East Asia: Too Much or Too Little?, World Bank Research Project.

Kho, B.C. and R.M. Stulz, 1999, Banks, the IMF, and the Asian Crisis, National Bureau of Economic Research Working Paper No. 7361.

Kim, W. and S.J. Wei, 1999, Foreign Portfolio Investors before and during a Crisis, National Bureau of Economic Research Working Paper No. 6968.

Krugman, P., 1994, The Myth of Asia's Miracle, Foreign Affairs, November/December

Krugman, P., 1998, What Happened to Asia?, mimeo, MIT.

Lane, T., A. Ghosh, J. Hamann, S. Phillips, M. Ghattas, and T Tsikata, 1999, IMF-Supported Programs in Indonesia, Korea, and Thailand, International Monetary Fund.

McLeod, R.H., Indonesia's Crisis and Future Prospects, Asian Contagion, Westview Press, 209 – 240.

Melloan, G., 2000, A Short Primer on What the IMF is all about, Wall Street Journal, March 7, A27.

Mishkin, F. S., 1999, Lessons from the Asian Crisis, National Bureau of Economic Research Working Paper No. 7102.

Montes, M.F., 1999, The Philippines as an Unwitting Participant in the Asian Economic Crisis, Asian Contagion, Westview, 241 –268.

Park, Y. C. and C. Y. Song, 1999, Financial Contagion in the East Asian Crisis – With Special Reference to the Republic of Korea -, WIDER/World Bank Research Project.

Phillips, M., 2000, Panel Assails IMF, World Bank Policies, Wall Street Journal, March 7, A3.

Pritsker, M., 2000, The Channels for Financial Contagion, WIDER/World Bank Research Project.

Pyo, H.K., 1999, The Tinancial Crisis in South Korea: Anatomy and Policy Imperatives, Asian Contagion, Westview Press, 151 – 169.

Radelet, S. and J. Sachs, 1998, The Onset of the East Asian Financial Crisis, National Bureau of Economic Research Working Paper No. 6680.

Rijckeghem, C. V. and B. Weder, 1999, Financial Contagion: Spillovers Through Banking Centers, WIDER/World Bank Research Project.

Rohwer, J., 1995, Asia Rising: Why America Will Prosper as Asia's Economies Boom, New York: Simon and Schuster.

Roubini, N., 1998, An Introduction to Open Economy Macroeconomics, Currency Crises and the Asian Crisis, available at <http://www.stern.nyu.edu/~nroubini/NOTES/intromacro.html>.

Roubini, N., 1999, Chronology of the Asian Currency Crisis and its Global Contagion: 1997, available at <http://www.stern.nyu.edu/~nroubini/asia/AsiaChronology1.html>.

Roubini, N., 1999, Chronology of the Asian Currency Crisis and its Global Contagion: 1998 January - March, available at <http://www.stern.nyu.edu/~nroubini/asia/AsiaChronology1998.html>.

Roubini, N., 1999, Chronology of the Asian Currency Crisis and its Global Contagion: 1998 April - June, available at <http://www.stern.nyu.edu/~nroubini/asia/AsiaChronology1998Q2.html>.

Sandy, R., 1990, Statistics For Business and Economics, McGraw-Hill publishing company.

Sarel, M., 1997, Growth and Productivity in ASEAN Countries, International Monetary Fund Working Paper WP/97/97.

Summers, L. H., 1998, Opportunities Out of Crises: Lesson From Asia, U.S. Treasury.

Thailand, 1997, Letter of Intent of the government of Thailand, Thaialnd.

Thompson, R., 1995, Empirical Methods of Event Studies in Corporate Finance, OR & MS, Vol 9.

United Nations, 1998, The World Economy in 1998, United Nations.

World Bank, 1993, The making of the East Asia miracle, World Bank Policy Research Bulletin.

Yellen, J., 1998, Lessons from the Asian Crisis, Council on Foreign Relations, New York, N.Y.